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MARKETING THE COMMERCIAL CROP OF EARLY POTATOES

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EARLY-CROP REGION

The border line between the early and late crop potato regions can not be drawn exactly. Even in the North, early-maturing potatoes are grown which can be harvested a month or so in advance of the late or main crop. These earlier crops of the North are sold chiefly in local markets, but they meet some of the same problems as the early crops of the South. Strictly, the early crop includes all potatoes of the early varieties wherever grown, but commercially the early-crop regions are those in which the greater part of the market crop consists of early maturing varieties not usually held in storage for later use, but sold promptly. The early crop usually begins to move from Florida and Texas in quantity in March. Other States begin to ship as the season progresses, and by September 1, practically all the early crop has been marketed. The annual car-lot movement of early potatoes from 23 States up to August 31 has averaged 62,000 cars during the five years 1925–1929 (Table 1), and was about one-fourth of the total annual car-lot movement of potatoes.

[1] The author acknowledges the assistance rendered in preparing this circular by George B. Fiske, associate marketing specialist, and Paul Froehlich, assistant marketing specialist, Bureau of Agricultural Economics. Valuable assistance was also rendered by representatives of the bureau in the field and in Washington in supplying information relating to conditions in certain producing districts and in leading markets.

TABLE 1.—*Car-lot shipments of early potatoes from 23 States producing an early crop*

[Shipments from beginning of season to August 31]

State	1925	1926	1927	1928	1929 [1]	Five-season average
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Alabama	1,046	2,220	2,098	3,127	1,540	2,006
Arizona	27	64	31	66	47	47
Arkansas	534	516	499	231	505	457
California:						
Northern district	1,283	1,495	1,523	646	1,324	1,254
Central district	867	1,671	1,094	1,319	1,036	1,197
Southern district	436	264	460	692	339	438
Delaware	19	33	68	16	48	37
Florida	5,135	4,807	5,403	7,717	5,067	5,626
Georgia	254	366	483	314	267	337
Kansas	2,730	4,035	3,551	2,703	2,374	3,079
Kentucky	711	333	822	443	1,215	705
Louisiana	1,280	1,419	1,272	1,709	1,111	1,358
Maryland:						
Eastern Shore	1,459	1,926	3,217	2,978	2,334	2,383
Other sections	0	2	2	2	5	2
Mississippi	27	38	68	147	112	78
Missouri	916	1,607	1,260	1,749	969	1,300
Nebraska	324	197	577	199	552	370
New Jersey	3,032	3,562	5,081	2,649	3,734	3,612
New Mexico	3	4	6	11	5	6
New York:						
Long Island	2,267	1,795	1,585	641	1,772	1,612
Other sections	9	0	0	0	7	3
North Carolina	4,037	6,659	7,477	9,177	5,871	6,644
Oklahoma	2,326	2,109	2,093	2,014	2,277	2,164
South Carolina	3,674	5,218	3,943	4,681	3,799	4,263
Tennessee	248	301	253	291	220	263
Texas	1,399	1,995	3,001	3,418	2,687	2,500
Virginia:						
Eastern shore	12,579	12,051	18,808	22,460	17,482	16,676
Norfolk section	3,087	3,844	4,281	3,888	3,093	3,639
Other sections	136	178	370	324	310	264
Total	49,845	58,709	69,326	73,612	60,102	62,319

[1] Subject to revision.

In some northern sections like Long Island, Colorado, southern Idaho, and even Minnesota and Maine, the early crop is of commercial importance and is shipped to distant markets, but in general the border line of the early-crop sections passes through Long Island and northern New Jersey and westward to Missouri, southern Nebraska, and central California. (Fig. 1.) In the border regions are both early and late sections which not only ship heavily in late summer but often hold large crops for winter sale.

Twenty-three States that ship potatoes before September 1 are included in Table 1. In most of these the early crop is the principal crop, although several of them grow both early and late potatoes. Some of the Northern States that market some stock before September 1 are not included. The 23 States are Alabama, Arizona, Arkansas, California, Delaware, Florida, Georgia, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, Nebraska, New Jersey, New Mexico, New York, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

There are large farming districts in which early potatoes are the chief money product. The farmers depend on potatoes for their cash income; merchants sell fertilizer, tools, seed stock, and general supplies; and dealers trade in the product, and, with the bankers,

advance money to the growers. The railroads rely greatly on the freight from the outgoing shipments and the incoming supplies. Times are good or bad, and money is plentiful or scarce in the district, according to the returns received from early potatoes.

The early shipments are mainly from certain well-defined commercial districts indicated on the map in Figure 1. Later crops are grown rather generally throughout this region for home use and local markets.

The car-lot shipment figures (Table 1) give a fair idea of the importance of these different early potato States. However, where early potato districts are situated near large markets, as New Jersey, considerable quantities are trucked to market, and the carload ship-

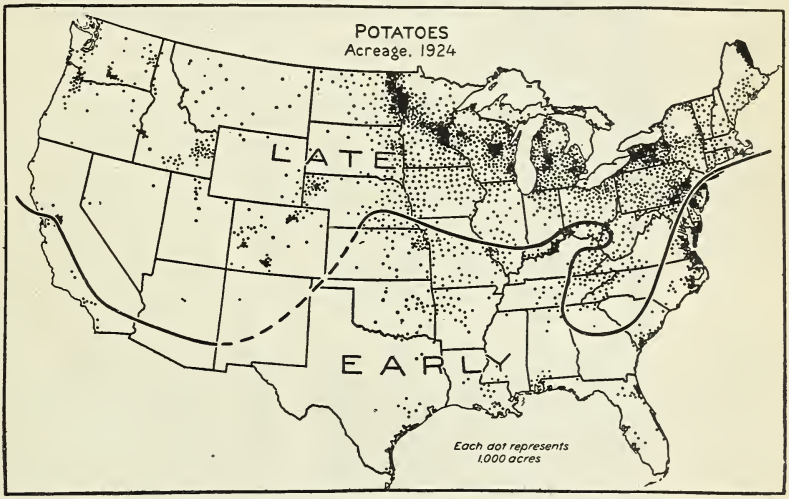

FIGURE 1.—The line drawn across the map indicates in a general way the division between the early and late crop regions. Many important early crop districts are situated near the Atlantic and Gulf coasts

ment figures do not show the entire commercial movement. During July and August, 1929, the equivalent of more than 600 cars of potatoes were brought into the New York jobbing and farmers' markets by motor truck.

In some States situated like Florida, beyond trucking distance from large markets, estimates show that more than 95 per cent of the commercial early crop is shipped in carloads. It is also estimated that between 75 and 80 per cent of the total commercial early crop of the 19 States shown in Table 2 was shipped in carloads during the period 1926–1929. This is figuring an average of 525 bushels per carload.

The commercial acreage of early potatoes varies considerably from year to year. In 19 States the potato acreage classified by the Division of Crop and Livestock Estimates as early and second early increased about one-third from 1925 to 1928, then dropped 28 per cent in 1929. The actual acreage figures for the five years beginning in 1925 were, in round numbers: 303,000, 324,000, 348,000, 401,000, and 289,000 acres. In some States the changes in acreage have been

much more pronounced than in others. For instance, in the lower Rio Grande Valley of Texas the acreage more than doubled from 1926 to 1927. (Table 2.)

TABLE 2.—*Acreage and production of commercial early potatoes in specified States, 1925 to 1929*

Group and State	Acreage					Production				
	1925	1926	1927	1928	1929	1925	1926	1927	1928	1929
	Acres	*Acres*	*Acres*	*Acres*	*Acres*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
Fall: Texas	450	150	350	300	750	45	11	18	18	38
Early:										
Florida	21,920	23,070	28,000	30,000	22,000	2,718	2,722	2,940	3,750	2,596
Texas (lower valley)	6,570	6,350	13,460	10,520	9,800	657	660	740	736	980
Total	28,490	29,420	41,460	40,520	31,800	3,375	3,382	3,680	4,486	3,576
Alabama	8,940	12,750	13,200	17,700	8,670	715	982	1,109	1,504	763
California	11,850	14,980	17,800	22,650	10,300	1,635	2,097	1,798	2,741	906
Georgia	2,010	2,250	2,250	2,500	1,550	131	191	259	225	150
Louisiana	15,630	20,000	21,860	21,800	15,100	1,047	1,200	1,421	1,526	966
Mississippi	1,240	1,300	1,700	1,950	1,560	68	104	136	176	136
North Carolina	22,100	29,000	36,000	46,400	25,000	2,144	3,480	4,320	6,403	3,300
South Carolina	14,860	18,720	18,000	24,000	14,000	1,828	2,527	2,070	3,360	1,918
Texas (other)	3,690	5,230	8,300	13,580	8,750	229	397	681	896	508
Virginia	90,050	89,000	78,700	90,900	77,900	9,185	9,345	14,087	15,908	11,997
Total	170,370	193,230	197,810	241,480	162,830	16,982	20,323	25,881	32,739	20,644
Second early:										
Arkansas	3,400	4,180	3,890	6,030	3,440	289	280	276	555	310
Kansas	16,500	15,800	17,300	18,160	12,890	1,700	2,481	2,508	3,505	1,418
Kentucky	5,620	5,620	5,340	5,340	4,270	601	584	662	1,041	705
Maryland	13,150	14,800	15,400	17,240	14,650	1,131	1,421	2,156	2,620	1,831
Missouri	4,800	5,000	5,180	6,400	4,610	480	1,000	648	1,280	553
Nebraska	1,500	1,200	1,700	1,900	1,750	172	132	255	285	262
New Jersey	44,000	40,000	44,800	45,000	39,000	4,664	5,600	7,213	7,290	5,031
Oklahoma	14,500	14,400	15,000	17,000	12,000	1,450	1,411	1,530	1,428	1,080
Tennessee	-------	-------	-------	2,000	1,500	-------	-------	-------	228	165
Total	103,470	101,000	108,610	119,070	94,110	10,487	12,909	15,248	18,232	11,355
Total	302,780	323,800	348,230	401,370	289,490	30,889	36,625	44,827	55,475	35,613

Division of Crop and Livestock Estimates

COMPETITION

Southern Florida sometimes begins to ship potatoes in January, but it is not until the latter part of March that new-crop shipments begin to roll to market in large quantities. The Hastings district of Florida and the lower Rio Grande Valley of Texas usually begin to ship in quantity near the end of March. (Table 3.) During the winter and early spring there are some receipts of potatoes from Bermuda and Cuba, chiefly at New York City. About the 1st of May a number of different early-potato States are shipping, and competition usually becomes keen. All through the spring months old potatoes from the late crop of the previous year are sold on the markets and compete with the new-crop shipments. Up until May 15 to 25 daily shipments of old potatoes usually exceed new-crop shipments. After this time the new-crop shipments are usually greater.

From May to August the northeastern markets are supplied chiefly with early potatoes from the Carolinas, Virginia, Maryland, New Jersey, and Long Island. There is some overlapping in the shipping seasons of these States as the season progresses northward and selling competition is strong. Potatoes from these States are also shipped to mid-western markets, where they compete with shipments from Gulf coast and Mississippi Valley States. The relative importance of early-potato States as measured by car-lot shipments and their principal shipping periods are shown in Figure 2.

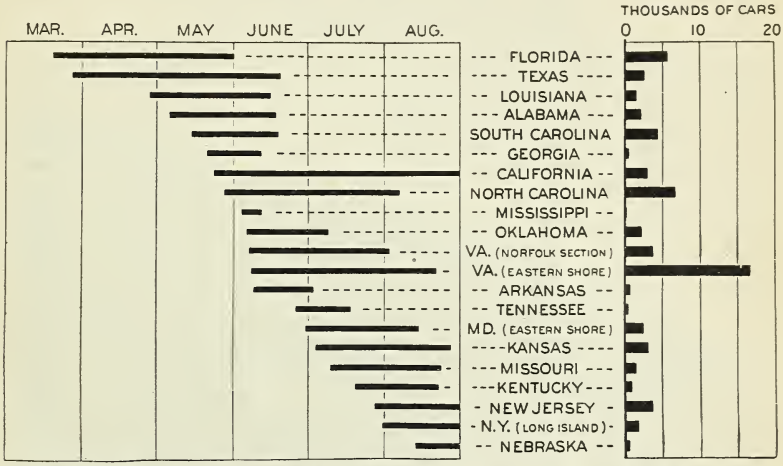

FIGURE 2.—PRINCIPAL SHIPPING SEASON AND CAR-LOT SHIPMENTS OF EARLY POTATOES FROM SPECIFIED STATES, AVERAGE, 1925-1929

The earliest potato shipments are from Florida. Virginia leads the other early States in quantity shipped. Some of these States ship after August 31, but such shipments are not here considered as early crop potatoes.

Virginia is the largest producer of early potatoes, and for the five years ended in 1929 averaged over 20,000 carload shipments per year. This is about one-third of the early-potato shipments from 23 States. The next five States in order as to volume shipped in carloads were North Carolina, Florida, South Carolina, New Jersey, and Kansas. (Table 1 and fig. 2.)

MARKET OUTLETS

Although cities in certain areas draw on certain producing sections for early-potato supplies year after year, there is some variation in the distribution of the crop in different seasons. The earliness or lateness of the movement from any district and size of the crop in various districts may change somewhat conditions of market competition, and consequently the distribution from season to season.

Figures 8 to 12 show the approximate market outlets for shipments from Hastings, Fla., district, lower Rio Grande Valley, Tex., South Carolina, Kaw Valley, Kans., and eastern shore of Virginia. Table 4 shows the principal sources of car-lot supply of early potatoes for 36 cities.

TABLE 3.—*Shipping seasons, varieties, packages, and representative shipping points for specified early-potato States*

State or district	Shipping season		Principal varieties	Principal packages	Representative shipping points
	Approximate dates of first and last car-lot shipments [1]	Principal shipping period [2]			
Alabama	May 2–July 30	May 5–June 17	Triumph	100-pound and 120-pound sack	Foley; Mobile.
Arkansas	May 27–Aug. 5	June 8–July 2	do	100 to 124-pound sacks	Fort Smith.
California	May 1–Aug. 31	May 23–Aug. 31	American Giant,[3] Burbank, Garnet, Chili.	100 to 116-pound sacks; 30 to 40-pound lug boxes.	Stockton, Shafter; Compton.
Florida	Jan. 26–July 9	Mar. 19–May 31	Spaulding No. 4	Double-headed barrel	Hastings.
Georgia	Apr. 27–Aug. 12	May 20–June 11	Irish Cobbler, Triumph	Cloth-top stave and slat barrel; 100-pound sack.	Savannah.
Kansas	June 20–Aug. 31	July 3–Aug. 27	Irish Cobbler	100 and 120-pound sacks	Lawrence; Topeka.
Kentucky	July 3–Aug. 31	July 19–Aug. 22	do	150-pound sack	St. Matthews; Louisville.
Louisiana	Apr. 2–July 20	Apr. 27–June 15	Triumph	100 and 110-pounds sacks	Lockport; Alexandria.
Maryland: Eastern Shore	June 21–Aug. 30	June 29–Aug. 14	Irish Cobbler	Cloth-top stave barrel	Pocomoke, Snow Hill.
Missouri	June 25–Aug. 31	July 9–Aug. 23	do	100 and 120-pound sacks	Orrick.
New Jersey	July 17–Aug. 31	July 27–Aug. 31	do	150 and 100-pound sacks	Hightstown; Bridgeton; Freehold.
New York: Long Island	July 22–Aug. 31	July 30–Aug. 31	do	150-pound sacks and bulk	Riverhead.
North Carolina	May 22–Aug. 29	May 27–Aug. 6	do	Cloth-top stave barrel	Elizabeth City; Mount Olive; Aurora.
Oklahoma	May 31–Aug. 16	June 5–July 8	Triumph	100 and 120-pound sacks	Spiro.
South Carolina	May 8–July 29	May 14–June 18	Irish Cobbler	Cloth-top slat and stave barrel	Charleston; Meggett.
Tennessee	June 12–Aug. 27	June 25–July 17	do	100-pound sack	Columbia.
Texas	Mar. 12–July 24	Mar. 27–June 19	Triumph	100, 120, and 50-pound sacks	Brownsville; Eagle Lake; Wharton.
Virginia:					
Norfolk section	June 22–Aug. 28	June 6–Aug. 2	Irish Cobbler	Cloth-top stave barrel	Norfolk.
Eastern shore	June 4–Aug. 31	June 7–Aug. 21	do	do	Onley.

[1] Aug. 31 is here listed as date of last shipment of early potatoes from those States that have a considerable potato movement after August.
[2] The principal shipping period is considered as the period from the time car-lot shipments reached 10 cars per day until they dropped below 10 cars per day.
[3] The American Giant is known locally as the White Rose or Wisconsin Pride.

Many early potatoes are shipped a distance of 500 to 1,500 miles to market. (Fig. 3.)

The chief sources of the early-potato supply for the eastern and some mid-western markets are: Florida, the Carolinas, Virginia, Maryland, New Jersey, and Long Island. Further important sources of mid-western supply are Alabama, Louisiana, Texas, Oklahoma, and Kansas. California produces large quantities of early potatoes that are mostly marketed in Pacific coast cities. Cuba is an important outlet for early potatoes during the summer, particularly for Virginia shipments.

FIGURE 3.—Long train loads of potatoes are shipped daily during the marketing season from important southern shipping stations

Small cities in the North are often good f. o. b. markets for early potatoes. The quantity used by a small city is limited, but the aggregate of such shipments is an important factor in the successful distribution of the early crop.

Although the early potato is chiefly a money crop it is not all shipped to distant markets. Growers living near towns and cities often find a convenient local market for small quantities. The small grower in such a locality who has less than a carload (about 500 to 600 bushels) can often sell his potatoes out locally to better advantage than if he ships in less-than-carload lots or sells to a speculative dealer.

TRANSPORTATION CHARGES

The cost of transportation to market is an important factor in determining the field of distribution of the crop from any district. Shippers in the Hastings, Fla., district have an advantage of about 6½ cents per 100 pounds, and South Carolina shippers one of 30½ cents, as compared with shippers in the Mobile, Ala., district in

TABLE 4.—*Car-lot potato supplies in 36 cities*

City	Principal source of early car-lot supply	Leading varieties in early car-lot supply	Car-lot potato unloads, average 1926–1928	
			Total crop	Early crop
Atlanta	Alabama, Florida, North Carolina, Georgia.	Triumph, Spaulding No. 4, Irish Cobbler.	909	329
Baltimore	Virginia, Florida, South Carolina, North Carolina, Maryland.	Irish Cobbler, Spaulding No. 4	2,073	1,169
Birmingham	Alabama, Kansas, Tennessee, Texas, Louisiana.	Triumph, Irish Cobbler	765	190
Boston	Virginia, New Jersey, North Carolina, Maryland, South Carolina, Florida.	Irish Cobbler, Spaulding No. 4	9,776	2,016
Buffalo	Virginia, South Carolina, Florida, North Carolina, Maryland, New Jersey.	do	1,273	832
Chicago	Virginia, Texas, North Carolina, Missouri, Kansas, Alabama, Oklahoma, Louisiana, Florida, Nebraska.	Irish Cobbler, Triumph, Spaulding No. 4.	15,617	4,223
Cincinnati	Alabama, Kentucky, Florida, Oklahoma, Louisiana, Texas.	do	3,071	923
Cleveland	Virginia, North Carolina, Florida	Irish Cobbler, Spaulding No. 4	3,690	1,390
Columbus	Virginia, North Carolina, Alabama, Florida.	Irish Cobbler, Triumph, Spaulding No. 4.	1,532	468
Dallas	Texas, Oklahoma, California	Triumph, American Giant (White Rose), "long white."	940	221
Denver	do	Triumph, Burbank, American Giant (White Rose).	1,177	158
Detroit	Virginia, North Carolina, Florida	Irish Cobbler, Spaulding No. 4	5,159	2,114
Fort Worth	Texas, California, Oklahoma, Kansas	Triumph, American Giant (White Rose), "long white," Irish Cobbler.	708	189
Indianapolis	North Carolina, Virginia, Kentucky Alabama.	Irish Cobbler, Triumph	1,950	533
Kansas City	Texas, Oklahoma, Louisiana, Kansas.	do	2,817	490
Los Angeles	California	Burbank, American Giant (White Rose), "long white".	5,355	678
Louisville	Alabama, Texas, North Carolina	Triumph, Irish Cobbler	1,200	248
Memphis	Louisiana, Oklahoma, Arkansas	Triumph	1,167	315
Milwaukee	Virginia, North Carolina, Missouri, Kansas.	Irish Cobbler	1,685	756
Minneapolis	Oklahoma, Texas, California	Triumph, Burbank, American Giant (White Rose), Garnet Chili.	862	208
Newark	Virginia, Florida, North Carolina, South Carolina, New Jersey.	Irish Cobbler, Spaulding No. 4	3,480	1,342
New Orleans	Louisiana, Kansas, Tennessee, Kentucky.	Triumph, Irish Cobbler	1,175	282
New York	Virginia, Florida, North Carolina, South Carolina, Long Island, Maryland, New Jersey.	Irish Cobbler, Spaulding No. 4	21,772	8,249
Omaha	Texas, Oklahoma, Louisiana	Triumph	1,165	234
Philadelphia	Virginia, Florida, South Carolina, North Carolina, New Jersey, Maryland.	Irish Cobbler, Spaulding No. 4	7,342	3,220
Pittsburgh	Virginia, Florida, South Carolina, North Carolina, New Jersey.	do	3,650	1,362
Portland, Oreg.	California, Texas	Burbank, American Giant (White Rose), Garnet Chili, Triumph.	758	107
Providence	Virginia, South Carolina, North Carolina.	Irish Cobbler	1,333	255
St. Louis	Oklahoma, Texas, Missouri, Louisiana, Alabama, Arkansas.	Triumph, Irish Cobbler	4,001	1,287
St. Paul	Oklahoma, Texas, California	Triumph, Burbank, American Giant (White Rose).	302	98
Salt Lake City	California, Texas	do	225	54
San Francisco	California	Burbank, Garnet Chili.	3,435	689
Seattle	California, Texas	Burbank, American Giant (White Rose), Garnet Chili, Triumph.	2,239	120
Spokane	do	do	184	18
Toledo	Virginia, North Carolina	Irish Cobbler	930	421
Washington	Virginia, Florida, North Carolina, South Carolina.	Irish Cobbler, Spaulding No. 4	1,712	574
Total			115,629	35,772

freight rates to New York City. (Table 5.) On the other hand the rate from Mobile to Chicago is 12½ cents per 100 pounds less than that from Hastings to Chicago and 13 cents less than that from Charleston, S. C., to Chicago. States along the Atlantic seaboard have an advantage in rates to the large eastern markets. Shipments to Chicago from North Carolina and Oklahoma take approximately the same rate. Kansas shipments to Chicago have an advantage over shipments from Virginia and New Jersey. Some shipments from California and Texas have been made under refrigeration. This service helps to insure good condition upon arrival at the market, but adds a considerable amount to the cost of distribution. The cost of refrigeration from Brownsville, Tex., to Chicago in recent years has been about $90 per carload.

TABLE 5.—*Minimum carload freight rates per 100 pounds of potatoes from certain shipping points to representative markets*[1]

Shipping point	Usual container	Rate to—				
		New York City	Pittsburgh, Pa.	Cincinnati, Ohio	Chicago, Ill.	St. Louis, Mo.
		Cents	*Cents*	*Cents*	*Cents*	*Cents*
Hastings, Fla	Barrel	68½	77	58	83	68½
Brownsville, Tex	Sack	112	101	89	89	79
Wharton, Tex	do	96	88	75	75	65
Mobile, Ala	do	75	80½	62	70½	60
Charleston, S. C	Barrel	44½	54	55½	83½	63½
Elizabeth City, N. C	do	37	45	50½	55	65
Onley, Va	do	34	40½	49	56½	66
Bridgeton, N. J	Sack	25	37	49	56½	66
Spiro, Okla	do	81	68	56	56	45
Lawrence, Kans	do	84	71	58	43	35

[1] These rates as of February, 1930, are shown only as a matter of information. They are subject to change and can have no standing in adjusting claims with the carriers.

VARIETIES

City dealers expect certain varieties from certain shipping areas. (Table 4.) In general, pink-skinned potatoes are expected from the Gulf Coast and lower Mississippi Valley States, and white stock from the central Atlantic Coast States and the Missouri and Ohio Valley States.

Potatoes from Bermuda were the original early stock. They were a well-known, small, reddish sort, which was widely adopted by growers in the Southern States. This original stock has been replaced largely by improved red or pink varieties, like the Triumph and Spaulding No. 4, or white kinds like the Irish Cobbler. These changes were made slowly, and the new varieties were first tested cautiously. The Spaulding No. 4 is the chief variety in Florida. In the Gulf Coast States farther west and in some Mississippi Valley States the Triumph is the important variety, whereas in the States bordering on the Atlantic Ocean and some States in the Mississippi and Ohio Valleys, the Irish Cobbler is the early-crop variety. In California several medium early maturing varieties are grown including the Garnet Chili and the American Giant. The latter is known locally as the White Rose or Wisconsin Pride.

New varieties or new crops should be grown only by those who can afford to lose something in the first trial but who hope to learn year by year how to handle the variety or to start a new shipping center with the help of other producers. Changes in quantity or kind are dangerous unless made slowly. It is the safest policy for the average early-potato farmer to grow only the variety that is marketed in large quantities from his locality.

PACKAGES AND LOADING

In seasons of heavy production a shortage of packages sometimes occurs. Growers and shippers should estimate their needs and arrange for packages as far in advance of the shipping season as possible.

In Florida the double-headed barrel is the package chiefly used and in the other Atlantic seaboard sections north to Maryland, the stave barrel with burlap cover (cloth top) is the principal package. The cloth-top slat barrel is used in some Atlantic coast districts. The double-headed barrel is a more substantial package than the cloth-top barrel but is a little more expensive. The slat barrel is less substantial than the stave barrel, and the inside hoop may cause bruising. The 150-pound sack is commonly used in shipments from New Jersey, Long Island, and Kentucky. Smaller sacks of about 100 pounds capacity are used in many of the Gulf Coast and Mississippi Valley States and to some extent in Central Atlantic States. Bushel hampers are often used for early shipments from Florida. These are sometimes shipped in small lots by express and are fairly satisfactory packages because they are handled more carefully than freight shipments. The first arrivals of the season as a rule sell at high prices, and buyers often prefer the small package. For car-lot freight shipments later in the season the hamper is not satisfactory because of loss from breakage. Some early shipments are made in bushel crates. The hamper and crate of about 1-bushel capacity, because of convenience and cheapness, are often used in short-distance marketing by motor truck. Sacks and lug boxes are the principal containers in California. (Table 3.)

Care should be taken in packing to insure a full, tight pack. (Fig. 4.) Complaints are frequently received from the markets that some receipts are "slack packed." Cars should be loaded and braced carefully in accordance with recommendations of the Department of Agriculture and the carriers. Poorly loaded cars may result in the shifting of the load and breakage of containers with consequent loss. (Fig. 15.) Farmers' Bulletin 1050 describes and illustrates in detail the best method of loading potatoes in either barrels or bags.

A loaded car usually contains 180 to 190 barrels. Two hundred and fifty 100-pound sacks are usually loaded in a car in Southern States. In sections like New Jersey where the 150-pound sack is common, the carload usually consists of 200 sacks. Proper ventilation is important in loading. In Texas and California some shipments of early potatoes are made under refrigeration, but in other areas ventilated cars are used.

SELLING THE CROP

In most commercial early-potato districts the majority of growers obtain financial assistance in producing and harvesting the potato crop. Many growers enter into contracts with dealers who may be operating independently or as agents of large-city dealers. Under

FIGURE 4.—The use of a barrel header helps to insure a tight pack in districts in which double-headed barrels are used. Cuts in the stave are for ventilation

the terms of these contracts the grower may obtain seed, fertilizer, and packages, and a certain amount of money for growing and harvesting expenses. The grower agrees to market through the dealer, who receives a marketing commission in addition to repayment for supplies and money advanced, and interest. There are various forms of contract, but the control of sale of the crop is usually in the hands

of a dealer or shipper. The trend is apparently toward the marketing control of a larger part of the early crop by large shippers or distributors and associations. In most districts there are some growers who are able to produce a crop without financial assistance and who retain control of the marketing. Some growers who are financially able to produce a crop prefer to contract with a dealer with whom they may have had business associations of long standing.

In some of the early-potato districts cooperative-marketing associations are in successful operation. Through these the members obtain seed, fertilizers, containers, and sometimes loans for production expenses.

The carload is the unit of sale at shipping point, but quotations are at a certain price per package or per 100 pounds. In districts that are near important markets some shipments are made by truck, but on account of the relatively low price of potatoes as compared with equal weights of some other commodities, and the lower freight rate on potatoes, it is usually not practicable to haul potatoes long distances by truck.

Car-lot sales by cooperative associations, by dealers at shipping point, or by large independent growers, are mostly on an "f. o. b. usual terms" basis, although some sales are on a basis of "delivered at destination." In most important producing districts cash buyers, who may be either independent dealers or representatives of city firms, operate during the season. During periods of heavy supply when the demand is slow, it is necessary to start some shipments rolling unsold toward market, or to consign them to city firms to be sold on a commission basis. On an f. o. b. usual terms sale the price applies to the shipments loaded on the car at shipping point. The buyer has the privilege of inspecting the shipment upon arrival at destination to determine whether it meets the terms of the agreement as to grade.

Even in periods of good demand many shipments are consigned to city firms which have arrangements with shippers to forward on consignment a certain number of cars through the season. These city commission firms in many instances have advanced funds to growers through their agents or dealers in the producing areas. Some of the large cities such as New York and Philadelphia have been known to shippers as consignment markets for early potatoes. This implies that a large percentage of the shipments to such markets are on consignment. There is some indication, however, that this type of transaction is decreasing in certain markets. Carloads that are of poor quality or small size are frequently consigned.

During the marketing season large shippers and associations send and receive dozens of telegrams each day. F. o. b. quotations are telegraphed to many dealers and brokers in northern markets, offers are received, and confirmations of sales are made. When the demand is good a large part of the day's loadings are sold f.o.b. usual terms or to cash buyers.

As illustrating the steps in distribution of a car of early potatoes, the story of a typical shipment from South Carolina to New York is of interest. A grower whose farm may be on an island near Charleston, S. C., has grown a crop under contract with a dealer who has assisted him financially in providing seed, barrels, and some cash

expenses. On a day in late May the potatoes are ready to harvest. The dealer requests the grower to load a car for shipment. The potatoes may be dug with forks and sorted by hand into barrels in the field. Care is taken to prevent sun scald caused by lying too long exposed to the sun. In the evening the barrels are loaded on a river boat, and after dark this boat pulls up beside a dock in Charleston Harbor. Here under the lighted sheds dozens of scantily clad negroes with hand trucks are at work loading box cars with the barreled potatoes that are arriving on the river boats. It may be midnight or after before the loaded train of barreled potatoes starts on its long trip north. The dealer may consign the car to a commission firm in New York City with which he has business connections. About three days after it was loaded the car arrives at Jersey City and is taken across the Hudson River on a lighter. Here on the pier it is unloaded and sold during the night in lots of 5 to 50 barrels to jobbers, retailers, or large users of potatoes. Much sales effort is needed in times of heavy supply to move the potatoes into the channels of distribution, and price reductions are often necessary. Hundreds of trucks and wagons are at work through the night hauling potatoes and other produce to the jobbing and retail stores throughout the city, sometimes 5 miles or more from the unloading pier.

The distribution of a carload of approximately 200 barrels of potatoes to the individual consumers, who frequently buy in 5 or 10 pound lots, is a huge task and involves many business transactions. It is not surprising that the costs of distribution, including transportation, distributing charges, waste, etc., often aggregate more than the amount received f. o. b. at shipping point by the producer.

GRADING AND INSPECTION

Proper grading is essential to success in marketing the early potato crop. It is a kind of market insurance upon which bargaining may be based, contracts made, disputes avoided, and losses adjusted. It protects shippers and buyers by supplying a standard of quality and a basis on which disputes and heavy losses may be avoided. It does much to reduce the difference between the price paid to the grower and the price received by the dealer. Whether the grower sells his own crop, contracts with a dealer, or belongs to an association, the matter of grading is of first importance. Much of the early crop is dug while still in a tender stage. Careful handling is necessary to prevent excessive skinning and bruising.

Under present conditions many potatoes are graded and sized when picked in the field. (Fig. 5.) If a sizing machine is used, a further inspection for defects is usually made as the potatoes pass over the machine. (Figs. 6 and 7.) Since much of the work is performed by colored laborers, careful supervision and training is required to insure a uniform grade.

In most districts certain farmers have built up reputations for reliability in grading and high-quality potatoes. Such farmers, whether selling independently to cash buyers, consigning, or marketing through a shipper, have an advantage over a grower who is lax in his production and grading practices.

It is particularly important that cooperative associations and other large shippers make every effort to obtain careful and uniform grading. A dependable high-grade product is a first requisite in building up a large clientele of satisfied customers. Some shipping associations have established their own brands and grades.

Standards for grading potatoes have been defined by the United States Bureau of Agricultural Economics,[2] and Federal inspection

FIGURE 5.—In some districts potatoes are sorted by hand and barreled in the fields

service is available in the large markets. Moreover, Federal-State inspection service is available in most of the important producing areas during the shipping season.

FIGURE 6.—Field sorting of southern potatoes over a machine into three sizes

Under these services, for a small fee (usually $3.50 to $4) a shipper or other financially interested party may have a car inspected and receive a certificate describing the contents and stating whether or not it meets the United States grade requirements. The United

[2] Copies of the potato grades are available for free distribution by the Bureau of Agricultural Economics, Washington, D. C.

States standards furnish a basis of trading and quotation which is now understood throughout the whole country.

Inspection facilitates trading between the buyer and the seller, who may be a long distance apart. The inspection certificate furnishes a definite description of quality and size.

The cost of inspection is a small item, but it helps to insure the shipper against unfair rejection of the car by the buyer in the receiving market. In case of a rejection by the buyer an inspection in the receiving market will furnish a basis for adjustment. If a shipment arrives at its destination in poor condition because of delay in transit or rough handling, an inspection certificate is useful in mak-

FIGURE 7.—A grading crew and sizing machine in a district in which the sack is used in shipping

ing claim for damages against the carrier. In case of a claim for loss because of delayed arrival and declining market, the inspection certificate will prove the quality of the load when shipped. A Federal inspection certificate is prima facie evidence in any United States court as to the quality and condition of a shipment. The inspection service is widely used by shippers. In 12 States which shipped about 85 per cent of the car-lot movement of early potatoes in 1929, approximately 38 per cent of the cars were inspected at shipping point.

In addition to careful grading and packing, the production of high-quality potatoes requires attention to other factors such as selection of good seed, fertilization, and proper cultural methods.

Since most of the early crop is not mature when harvested the potatoes skin or "feather" easily, and a certain amount of this condition is to be expected. Careful handling, however, will lessen the

amount of skinning and bruising and result in a better appearance of the lot. Skinned and bruised potatoes are more susceptible to decay than is stock not injured in this manner, because of the ease with which organisms that produce decay can enter the tuber. Damage resulting from cuts and bruises is one of the chief defects in early-potato shipments and can largely be prevented by proper care in harvesting and packing.

Sun scald is a serious defect and frequently causes much loss in early-potato shipments. It is caused by the intense heat of the sun, especially when potatoes are exposed to its direct rays for too long a period. Potatoes that have been sun scalded often show no visible indication of such injury at the time of packing but later develop discolored sunken areas that rapidly break down into slimy soft rot. (Fig. 14.) Preliminary studies indicate that damage from scald can be largely controlled by the grower if he will harvest his potatoes in such a manner as to prevent their exposure to the hot sun for any considerable length of time. Sun scald should not be confused with sunburn which is a green discoloration due to long exposure to light.

Muddy or dirty potatoes hurt the marketability and provide conditions under which certain kinds of rot are likely to develop. This damage can largely be avoided by harvesting only when the soil is dry enough to prevent this muddy or dirty condition. Other causes of damage to early potatoes include scab, various kinds of rot, wireworm, grub, and tuber moth.

A rather frequent cause of complaint in the markets is slack packing of barrels. The discount in the markets on slack-packed barrels is often more than the proportionate value of the shortage. To insure a well-filled barrel upon arrival at the market the grower or shipper should see that the barrel is shaken down several times during the filling process, and in the case of double-headed barrels a barrel press should be used. (Fig. 4.)

PRICE-MAKING FACTORS

The grower is primarily interested in the price that he receives. Not only is the price per bushel, per barrel, or per 100 pounds important, but the total amount received for his crop largely determines the profit or loss in his season's operations. The price per unit may be high, but if the grower has a light yield he may have little or no profit after allowing for his overhead and other expenses. On the other hand, very heavy yields and low prices may show the same results. A legitimate aim of the grower is to obtain high yields per acre of good-quality potatoes and to obtain the best possible price.

The production of potatoes in the districts in which the grower is located and in other early districts that market during the same period is the most important factor in determining the price the grower will receive. For example, during the last few years the effect of a given volume of shipments from the South on new-crop prices in Florida has been about twice as great as that from an equal volume of competing shipments from the North.[3] In deciding on the acreage to plant, growers and shippers should keep informed,

[3] From an unpublished report, Factors in the 1930 Florida Potato Price Outlook, March, 1930, by L. H. Bean, U. S. Bureau of Agricultural Economics.

by means of crop-report information, on the acreage planted in sections to the south of them and intentions of growers as to acreage in other early districts. Table 6 shows some price-making factors for the period 1918 to 1929. The average farm value of the early crop during the period 1925–1929 was approximately $48,000,000.

TABLE 6.—*Commercial early-potato crop, prices, and factors influencing prices, 1918–1929* [1]

Year	Commercial early crop	Early potatoes		Production in 35 late States	Stock on hand Jan. 1 from previous year's crop [3] (35 States)	Price of old stock per 100 pounds in Chicago, car-lot sales	
		Average farm price, per bushel	Weighted seasonal average jobbing price per 100 pounds New York City [2]			January	May
	1,000 bushels	*Dollars*	*Dollars*	*1,000 bushels*	*1,000 bushels*	*Dollars*	*Dollars*
1918	29,901	1.41	----------	374,649	108,778	----------	----------
1919	24,951	1.67	3.87	298,539	93,258	----------	----------
1920	30,719	2.57	6.00	376,866	65,405	[4] 5.54	7.40
1921	30,193	1.13	2.65	337,980	107,991	1.29	.87
1922	36,198	1.17	2.63	423,885	90,023	1.98	1.70
1923	26,245	1.59	3.30	386,645	132,943	1.02	1.13
1924	44,103	.91	2.27	393,767	110,258	1.58	1.50
1925	30,890	1.39	3.11	300,635	119,223	1.47	1.18
1926	36,625	1.53	3.64	325,681	71,344	4.08	3.23
1927	44,827	1.37	3.25	370,805	84,117	2.55	3.51
1928	55,475	.56	1.72	422,431	99,746	1.63	1.43
1929	35,613	1.31	2.99	324,683	130,935	1.31	1.36

[1] The 1928 and 1929 figures include the early and second-early commercial crop in 19 States. Prior to 1928 Tennessee was not included.
[2] Season from April to August weighted according to monthly unloads of early potatoes in New York.
[3] These figures include stocks in the hands of growers and local dealers.
[4] Jobbing sales.

The price of early potatoes marketed before July 1, is influenced considerably by the price of old potatoes at the time the new crop is being marketed. The size of the previous year's crop in the late-producing States: the size of the January 1 stocks in the hands of growers and country dealers; and the percentage of the crop shipped prior to January 1, are all reflected in the January price of old potatoes. Table 6 shows that in most years there is a rather close relation between the January and May price of old stock as indicated by the Chicago market. Usually the January price can be considered as a general indication of the price to be expected on old stock during the spring months, and in southern sections where planting is done in January or later, can be taken into consideration by growers in deciding on acreage to be planted.

In certain years shown in Table 6, such as 1920, 1921, 1922, and 1926, the change in the size of the commercial early crop as compared with that of the preceding year did not result in the expected change in average price of the early crop. For example, in 1926 an increase of about 6,000,000 bushels in the size of the early crop as compared with that of 1925 did not result in a decrease in the average price but in an increase from $1.39 to $1.53. This is largely explained by the fact that there was a short crop of old potatoes in 1925 and that the price of old stock in Chicago in May, 1926, was $3.23 per 100 pounds, as compared with $1.18 in May, 1925. The

price received in 1926 for the earlier new-crop shipments particularly was high. The f. o. b. price on Florida stock averaged $9.02 per barrel. (Table 7.) Evidently, when the price of old stock is high it is a strengthening factor in the price situation for early potatoes that are marketed in competition during the spring months.

TABLE 7.—*Prices of early potatoes in car lots at representative shipping points and State shipments for specified periods, 1926–1929*

Shipping point	Year and period	Unit of sale and variety	F. o. b. usual terms prices for period covered, U. S. No. 1 grade				Shipments from State during period
			Opening	High	Low	Average[1]	
			Dollars	*Dollars*	*Dollars*	*Dollars*	*Cars*
Hastings, Fla.	1926, Apr. 21–May 15	Double-headed barrels.	9.00	9.50	8.50	9.02	3,083
	1927, Apr. 6–May 7		6.00	6.50	4.50	5.42	4,109
	1928, Apr. 17–May 24	Spaulding No. 4.	10.00	10.00	2.75	4.47	5,806
Brownsville, Tex.	1926, Mar. 29–May 24	Sacked per 100 pounds. Triumph.	7.00	7.00	4.00	5.36	1,477
	1927, Mar. 17–May 24		7.00	7.00	2.75	3.53	2,181
	1928, Mar. 19–May 20		5.00	5.00	2.25	3.62	1,539
	1929, Mar. 14–May 1		4.50	4.50	2.50	3.18	1,520
Mobile, Ala.	1926, May 18–June 11	----do	5.25	5.75	2.75	3.47	1,950
	1927, May 4–May 27		3.25	4.50	2.75	3.78	1,611
	1928, May 11–June 14		2.50	2.60	1.00	1.63	2,197
	1929, May 8–June 5		3.25	4.00	2.75	3.33	1,023
Elizabeth City, N.C.	1926, June 8–June 30	Cloth-top stave barrels. Irish Cobbler.	5.75	6.25	4.25	5.29	957
	1927, June 2–June 29		8.00	10.00	3.50	5.01	2,076
	1928, June 4–July 2		3.00	3.00	1.20	1.55	2,198
	1929, June 4–June 26		4.00	4.25	2.65	3.04	1,186
Lawrence, Kans.	1926, July 6–Aug. 13	Sacked per 100 pounds. Irish Cobbler.	[2] 2.00	[2] 2.25	[2] 1.10	[2] 1.43	3,401
	1927, July 9–Aug. 30		2.10	2.25	1.30	1.69	3,137
	1928, July 14–Aug. 31		.85	.85	.50	.56	2,557
	1929, July 13–Aug. 12		2.75	2.75	1.75	2.14	2,065
Onley, Va.	1926, June 17–Aug. 3	Cloth-top stave barrels. Irish Cobbler.	5.25	6.50	2.50	3.87	11,808
	1927, June 11–Aug. 11		6.00	6.00	2.25	3.71	18,379
	1928, June 13–Aug. 2		2.50	2.50	1.00	1.43	19,205
	1929, June 3–July 27		4.75	5.25	3.00	3.88	17,073
New Jersey points.	1926, Aug. 2–Aug. 31	150-pound sacks. Irish Cobbler.	3.25	4.50	3.00	3.56	3,456
	1927, July 26–Aug. 31		2.25	3.25	2.00	2.55	5,067
	1928, Aug. 7–Aug. 31		1.50	1.75	1.40	1.52	2,600
	1929, July 25–Aug. 23		3.60	5.25	3.60	4.62	3,470

[1] Average prices are weighted according to daily car-lot shipments. Since some shipments are consigned and allowances are sometimes made on f. o. b. sales, these average prices may vary somewhat from the actual average returns at shipping point for all shipments.
[2] F. o. b. cash track prices.

Judging from conditions during recent years, the relation between supply of new potatoes and price is such that a commercial crop of 35,000,000 bushels in 10 important early States (Texas, Florida, Alabama, California, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Virginia) is likely to result in an average price of 75 cents per bushel to growers. A crop of 20,000,000 bushels is likely to return growers about $1.75 per bushel. However, if old-crop stocks and prices in the spring are abnormally high or low, the new-crop prices will be affected accordingly. In 1927 light stocks and high prices of old-crop potatoes gave the southern growers about 50 cents per bushel more than would be expected from the volume of southern potatoes produced that year. In 1921, when the price of old potatoes was very low the spring prices of new-crop potatoes were depressed nearly 50 cents per bushels.[4]

[4] See the following publications: BEAN, L. H. SIMPLIFIED METHOD OF GRAPHIC CURVILINEAR CORRELATION. Jour. Amer. Statis. Assoc. 24: 395. 1929. Also BEAN, L. H. THE RELATION BETWEEN PRODUCTION, PRICES, AND ACREAGE OF POTATOES ON THE EASTERN SHORE OF MARYLAND. U. S. Dept. Agr., Bur. Agr. Econ. 1929. [Mimeographed.]

The marketing situation for any district, and consequently the price, is affected by the earliness or lateness of the movement from other districts that ship at approximately the same time. For example, if the season in Florida is later than usual, as it was in 1928, shipments from that State may compete for a considerable period with South Carolina and Alabama shipments and thus tend to lower the average price for all three States. Wide variations in f. o. b. prices have occurred from year to year in shipments from important districts. The quantity shipped during certain shipping periods is apparently a very important price-determining factor. (Table 7.)

Changes in the general price level and readjustments in business conditions, such as occurred in 1920 and 1921, have an effect on early-potato prices. The early crop, which is marketed during the spring months, goes largely to the luxury trade or to consumers whose incomes are above the average. Consequently it may be expected that the price of early potatoes in the spring months would be less affected by business conditions than the price of the crop marketed during the summer months. The average quality and size of potatoes also have some influence on prices growers receive.

INTERSTATE EARLY POTATO COMMITTEE

Since the combined production of early potatoes in districts that market during approximately the same period is perhaps the most important price-determining factor, a strong effort was inaugurated in 1929 to adjust the supply in important Atlantic Seaboard States looking toward a fair return to growers.

An interstate early-potato committee was organized through the cooperation of the United States Department of Agriculture and state agencies in Virginia, Maryland, and North Carolina with this object in view. South Carolina and Florida later were represented on the committee.

The committee works through cooperative associations, growers, dealers, bankers, and handlers of supplies, in influencing the planting of an acreage that, with average yields, will probably result in satisfactory prices. The size of the crop is of course dependent not only on the acreage but also on the yield per acre, and acre yields have varied widely from year to year. For example, in 1926 in Virginia the average yield per acre of commercial early potatoes was 105 bushels as compared with 179 bushels in 1927. But such wide variations are unusual. In outlining a planting program for an area the best assumption is that the yield per acre will approximate the average yield of recent years. In general, the plan of the committee is to encourage the planting of only sufficient acreage to produce, under normal weather conditions, a crop that the markets will absorb at a fair price. The success of such a program is dependent largely on the cooperation not only of independent growers and cooperative associations, but also of dealers who contract acreage, and bankers and others who finance the production of the crop.

MARKET INFORMATION

The grower who studies the market-news reports and makes use of all reliable sources of information as to conditions in the markets and

the producing areas has a greater chance of success than has the farmer who is not well-informed or who is misinformed. The alert grower or shipper is in constant touch with market conditions from day to day, and has in mind the general trend of prices and shipments and the prevailing margin between prices at shipping points and market prices. On the whole, prices do not vary greatly among principal markets when a difference of 5 to 10 cents per 100 pounds in freight charge is taken into consideration.

Even though the grower has placed the responsibility for marketing his crop with a dealer or association, he should keep in touch with marketing conditions. By keeping well informed as to shipping-point and city prices, and making proper allowances for transportation charges in case of consignments, and allowing for certain marketing charges, the grower can figure approximately what he should receive. He should realize that allowances on f. o. b. sales are sometimes necessary and that it is not to be expected that the "top of the market" will always be received on consignments. The well-posted farmer who markets his own crop is in a position to judge when a cash buyer has made a fair offer, and whether he should sell or ship to a reliable commission merchant to sell for his account. The farmer who has contracted with a shipper or belongs to an association can study his returns and judge as to whether his crop has been marketed efficiently.

Market news of country-wide scope is provided by the United States Department of Agriculture. Prices of sales of large quantities in leading markets, and country prices as reported by its representatives in shipping sections, are quoted daily. During the most active shipping season these reports, whch are mailed free upon request, are issued from branch offices in New York, Boston, Philadelphia, Baltimore, Washington, Pittsburgh, Detroit, Cleveland, Cincinnati, Chicago, St. Louis, Kansas City, Los Angeles, Atlanta, Fort Worth, Dallas, Portland, Oreg., San Francisco, and Minneapolis. Daily reports are also issued from several temporary field stations in large early-potato shipping districts, and are therefore within reach of most shippers. Facts regarding drought, storms, and freezes appear in the next official reports showing crop conditions or probable yield. Periodic crop notes issued by the Bureau of Agricultural Economics describe conditions and progress of the crops in producing sections.

Crops and Markets, which is a monthly publication of the Department of Agriculture at Washington, includes much crop and market information of importance to growers and may be obtained at the subscription price of 60 cents a year from the Superintendent of Documents, Washington, D. C.

Newspaper accounts are often unsafe guides because the early reports of drought, storm, freezes, and damage to crops are often far from accurate. Usually the real situation can be arrived at only after careful compilation and appraisement of all local reports.

A weekly market review of fruits and vegetables is issued each Tuesday, covering prices and market and crop conditions and is available for free distribution from Washington or from the nearest market station. Brief summaries of market conditions are sent out

daily from various points by means of wireless telegraph and telephone. Many local newspapers feature these reports.

Various crop and market reports are issued by State departments of agriculture. Farm papers and produce-trade papers contribute additional crop and market news. Some county farm bureaus aid directly in potato marketing. The official reports of various kinds may be obtained free on application and should be kept in handy form where they can be used promptly for making plans for the crop and its sale.

Market information about the early-potato crop is sent out from field stations of the Department of Agriculture which are usually operated in season at such central shipping points, as Hastings, Fla., Brownsville, Tex., Mobile, Ala., Elizabeth City, N. C., and Pocomoke, Md. Shipping-point news of southern New Jersey is issued from the Philadelphia market station, and news of the Kaw Valley crop is sent out from the market station at Kansas City.

Some railroad companies have an agricultural department that helps shippers in finding their market by publishing a list of buyers and shippers together with the acreage and the quantity of stock expected to be bought or sold.

An annual outlook report is issued about the first of February by the Bureau of Agricultural Economics, which summarizes the situation and states the outlook for the season. In 1929 further reports were issued. In September, 1929, a report was issued by the bureau showing in a preliminary way what growers in the lower Rio Grande Valley and in Florida were planning as to acreage for the following season. In November a report was issued giving the intentions of growers in 11 Southern States as to potato acreage to be planted for the next crop. About February a report is issued showing the acreage planted or intended to be planted in the early States. In planning for the season, growers and shippers will find it to their advantage to keep in touch with these reports.

The grower also needs the services of successful and reliable dealers. Information regarding the business standing and reliability of dealers usually can be obtained at the local banks and from various commercial directories. The dealer himself is often asked and should be willing to supply references as to his own financial position and reliability. The United States produce agency act provides protection to growers in the case of interstate shipments to be sold on a commission basis. Cases of fraud or of failure to make proper returns on consignments should be reported to the Bureau of Agricultural Economics, Washington, D. C.

MARKET CONDITIONS IN TYPICAL SEASONS

A review of the conditions that existed in certain seasons should help growers in sizing up current situations in the light of available economic information.

The 1928 early-potato season was one of heavy production and low prices, whereas in the 1929 season the production was much less and the prices were higher than in 1928.

In sizing up the situation early in January, 1928, the southern grower who had not yet planted his crop had available the following

information: The 1927 crop in 35 late States was 371,000,000 bushels, as compared with 326,000,000 bushels in the previous year, an increase of 14 per cent. Stocks of old potatoes in the hands of growers and local dealers in 35 late States on January 1, 1928, were approximately 100,000,000 bushels, as compared with 84,000,000 bushels the previous year, an increase of 19 per cent. (Table 6.) The average farm price for all early-potato sections was reported as $1.37 per bushel in 1927 and $1.53 in 1926. The 1927 price of $1.37 was apparently still high enough to encourage many southern growers to increase their acreage in 1928. The indicated increase in competition from old stock during the spring of 1928 should have been a warning to southern growers to proceed cautiously.

As a matter of fact, the combined acreage in Florida and the lower Rio Grande Valley of Texas was not increased in 1928, but in most other early States there was a pronounced increase in acreage. (Table 2.) This increase in acreage coupled with a high average yield of 138 bushels per acre in the early States and the increased competition of old stock resulted in disastrously low prices in most of the early States. The average farm price in 1928 was only 56 cents per bushel instead of $1.37, as reported in 1927. Early shipments from Florida and Texas, however, sold at good prices. (Table 7.)

The 1928 outlook report issued in February, 1928, cautioned growers in the intermediate-shipping States (in which plantings had not been made when the report was issued) against an increase in acreage. The report stated that if this intermediate group of States materially increased its plantings there would be danger of heavy supply and low prices during the late summer period.

The following year the January 1, 1929, report showed an increase of more than 30 per cent as compared with January 1, 1928, in the stocks of potatoes in the hands of growers and local dealers. The production of potatoes in 35 late States in 1928 was 14 per cent greater than in 1927. Growers in early States, discouraged by the low prices in 1928 and the prospects for strong competition from old stock in the spring and early summer of 1929, made a drastic reduction in acreage. In 19 early States the acreage was reduced from 401,000 acres in 1928 to 289,000 in 1929, a reduction of 28 per cent. (Table 2.) Yields per acre in most Southern States were less in 1929 than in 1928, and the much smaller crop averaged $1.31 per bushel to farmers instead of 56 cents, which was the average in 1928. (Table 6.) The outlook report issued in February, 1929, summarized the situation and pointed out the necessity of a reduction of at least 25 per cent in acreage in the States that market before July 1.

The total farm value of the commercial early-potato crop of 55,000,000 bushels in 1928 was $31,000,000, whereas the lighter production in 1929 of less than 36,000,000 bushels was worth nearly $47,000,000.

The outlook for the season may vary considerably among the early States. (Table 7.) Since most of the old-crop shipments are moved to market before July 1, growers in the States marketing an early crop in July and August are not so much concerned with the stocks of old potatoes, when planning their acreage, as with the

planting intentions of growers in their own and competing States. Growers in States marketing before July must keep in mind the supplies of old stock as well as intentions as to acreage of growers in their own and competing States.

PRACTICES IN IMPORTANT PRODUCING DISTRICTS

In districts in which the early-potato industry is highly centralized, methods of handling and marketing are likely to be more efficient than in districts in which production is scattered and the industry is undeveloped. In important districts the large volume handled and the strong competition leads to efficiency and the use of methods that will give the best returns. A study of the methods used in leading districts will be helpful to growers and shippers in

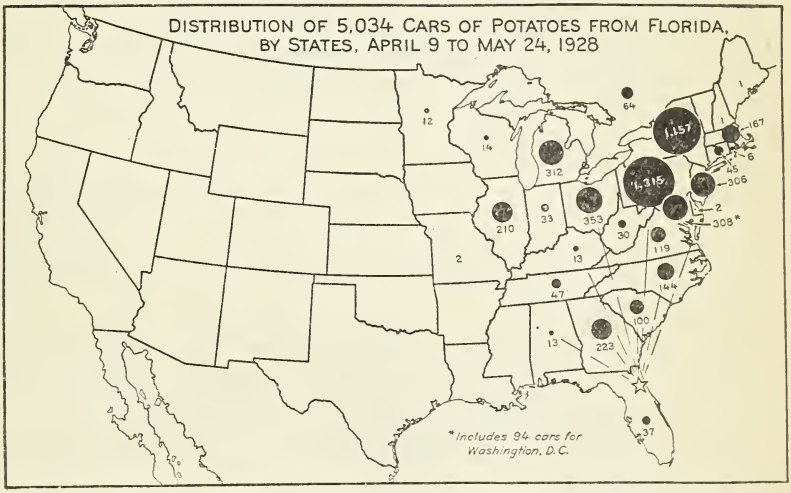

FIGURE 8.—Almost half of the Florida potatoes go to New York and Pennsylvania markets

other centralized districts, as well as to those at small shipping points and in new sections. Descriptions of conditions in certain important early-potato districts follow.

HASTINGS, FLA., DISTRICT

The Hastings district of Florida is the first important early-potato district to begin shipping. During the period from about the middle of March to the middle of May this district is the most important source of early potatoes. There are some earlier shipments from points farther south in Florida. In the Hastings district, three counties—St. Johns, Putnam, and Flagler—have shipped about 75 to 80 per cent of the Florida movement, which in the last five years has varied from about 4,800 to 7,700 cars.

Potatoes from southern Texas offer competition in some Mississippi Valley markets. Before the Florida shipments have all moved, Louisiana, Alabama, Georgia, and South Carolina frequently begin to ship in volume. The Northeastern States are the principal consuming territory for Florida potatoes, but shipments in considerable volume are made to States as far west as Illinois. (Fig. 8.)

The Spaulding No. 4 is the chief variety grown, and probably 95 per cent of the acreage in the Hastings district is devoted to this variety. A few Irish Cobbler and Triumph are produced.

The double-headed barrel is the package chiefly used, although a few early shipments are in bushel hampers and bushel crates. A few 10-peck sacks are used, particularly in times of barrel shortages. Shipments are made under ventilation, many of them in box cars.

A general practice in harvesting is to bar off both sides of the row with a plow; then the laborer digs the potatoes with a potato rake and picks all of them into field crates or other containers and covers with potato vines. They are then hauled to a sizing machine, which may be set up in the field or in a shed. The larger sizing machines are power driven, whereas the smaller ones are operated by hand. In grading, the defective potatoes are sorted out at the sizing machine. It is necessary to exercise care in handling and sizing these early potatoes to prevent unnecessary bruising and skinning.

Potato growing is the chief source of farm income in this section of Florida. The marketing is largely controlled by the local association and dealers who assist in financing the farmers. Contracts are made between dealers and growers which require that the growers sell through these dealers on a commission basis, the usual rate being 5 to 10 per cent. On contracted acreage, dealers frequently advance to the grower a certain amount per acre to pay the cost of growing and harvesting the crop or indorse the grower's note to provide funds for production expenses.

The dealers may supply seed and barrels, and sometimes the fertilizer. These charges are deducted from the receipts for sale of potatoes before the grower receives anything. Independent growers or growers who are members of an association and who do not depend on a dealer, are in a position to buy seed and supplies at the lowest prices and to save for themselves a part of the interest and various profits.

Shippers endeavor to sell on an f. o. b. usual terms basis. Most of the sales are on telegraphic orders. At the end of the day's business the cars that have not been sold are consigned or "rolled unsold." An effort is made to sell these cars that have been rolled unsold before they reach Potomac Yards, Va., or some other diversion point, from which they can be diverted to the market where purchased. Some dealers have connections in northern markets to which stock is consigned. The percentage of shipments consigned varies with the demand and with the quality and condition of the stock. Some northern commission houses have their own representatives in the district who solicit consignments from growers or shippers.

The shippers are in constant communication with the northern markets, and price news and other information useful in governing sales is obtained from the local office of the Bureau of Agricultural Economics which usually operates at Hastings during the shipping season.

Nearly all of the labor of harvesting, packing, and loading is performed by colored help. There is a rush of car loading in the afternoons and evenings during the heavy shipping season. By midnight the day's work is done, and the long trains of loaded cars are on their

way north. One day in May, 1928, 120 cars of potatoes were billed from Hastings. (Fig. 3.)

LOWER RIO GRANDE VALLEY, TEX.

An important potato district is near the mouth of the Rio Grande River in Texas and is mostly in Cameron County. It was not until 1925 that the Rio Grande Valley became an important source of early-potato supply. The shipping season usually begins in the latter part of March and continues into May. It is, therefore, one of the earliest sections and ships to Mississippi Valley markets at the same time Florida potatoes are moving to market. Cities in Texas, Missouri, Illinois, and Oklahoma are important markets for potatoes from this district. A number of cars are shipped each year to Pacific coast markets. (Fig. 9.)

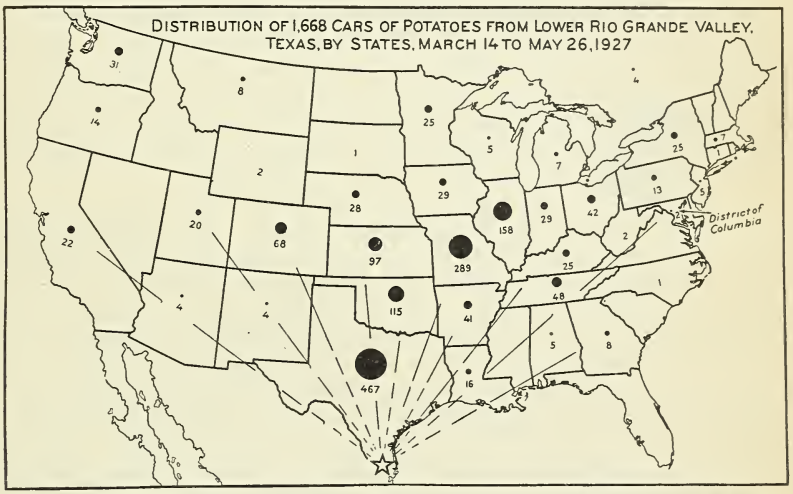

FIGURE 9.—The principal markets for lower Rio Grande Valley potatoes are in Texas, Missouri, Illinois, and Oklahoma

The only variety grown commercially is the Triumph. Seed stock is obtained mostly from Nebraska, Wyoming, Montana, and the Dakotas. Shipments are mostly in even-weight 100-pound sacks. Some 50-pound sacks are used. Practically all shipments are made under refrigeration, although some cars carry "initial ice" only, which is supposed to keep the load cool until the car reaches a cooler climate. Normally most of the car-lot sales are on an f. o. b. usual-terms basis.

The crop of potatoes in the lower Rio Grande Valley is harvested by plowing up with various types of potato diggers. Next, they are picked up (generally by Mexican labor), carried to machine sizers, graded, and sacked in the field. In some cases the potatoes are graded near the car door where an inspector may watch the process to conform with certain quarantine regulations by a few States against potato beetle. Practically all potatoes from this section are graded in accordance with United States standards.

Growers are financed by seed dealers (mostly local) who usually furnish seed to growers for half the yield and the privilege of marketing the crop. Some growers of seed potatoes in Nebraska and other States vary slightly from the 50-50 rule, but never more than 10 per cent either way. Dealers collect 5 per cent of the f. o. b. sale price, also 3 cents for each sack of 100 pounds, and brokerage at the receiving market. The 5 per cent is the commission charged, 3 cents is a handling or loading charge, and the brokerage at the other end is usually $15 per car. A cooperative growers' association controls 75 to 90 per cent of the acreage. The association does not sell the potatoes but decides on a price after conferring with dealers who are licensed by the association.

SOUTHERN ALABAMA

The commercial potato district in southern Alabama is largely in Baldwin, Mobile, and Escambia Counties. The shipping season is usually from early May until about the middle of June. Alabama potatoes are marketed during approximately the same period as Louisiana potatoes. The latter part of the Florida movement and part of the South Carolina movement sometimes offer strong competition. The consuming territory for Alabama potatoes is largely in the Mississippi Valley and the Great Lakes section.

The Triumph is the leading commercial variety, and shipments are made in 100 and 120 pound sacks. There are a number of large dealers who control most of the acreage. Under normal conditions sales are made by these dealers on telegraphic orders, f. o. b. usual terms. In periods of strong demand many cars are sold for cash at shipping point. In periods of heavy shipments it is necessary, as in other potato districts, to ship on consignment to city markets or to roll cars unsold. Most sales are on a basis of United States grades.

Plantings are financed by large dealers to a great extent, either on a share basis or by advances secured by crop mortages. In either case there is usually an agreement that the dealer will sell the crop on a commission basis.

Potatoes are harvested usually by plowing out with a plow and picking up by hand. Some machine diggers are used, especially on the larger farms. Then the potatoes are hauled to platforms or warehouses along railroad tracks and run over sizing machines. Most grading is done with United States standards as a basis, and the grower is paid for the United States No. 1 potatoes obtained after grading. Those of No. 2 grade and seconds are accepted at a discount. These seconds are not necessarily United States No. 2 grade but are rather machine-sized No. 2's, being the potatoes that fall through the 1⅞-inch mesh on the sizers.

There are several cooperative associations in the district, either for cooperative buying of supplies or selling of potatoes.

SOUTH CAROLINA

South Carolina potatoes normally move to market during the latter half of May and the first half of June. During this period Alabama, Louisiana, Georgia, and the Wharton-Eagle Lake district of Texas are shipping. Further competition is offered by the latter part of the Florida movement and the first part of the North

Carolina movement. Most of the South Carolina shipments originate in Charleston, Beaufort, and Colleton Counties in the southeastern part of the State. A large part of the crop is marketed in the Northeastern States, particularly New York and Pennsylvania. Relatively few South Carolina shipments go to middle-western markets because of competition from Alabama and other producing sections farther west. (Fig. 10.)

The leading variety grown is the Irish Cobbler, although a limited quantity of Spaulding No. 4 and Green Mountain varieties are produced. Cloth-top slat or stave barrels are used in shipping. A common practice is to sort the potatoes by hand in the field as they are picked up. A large cooperative association operates in the Charleston district, and a few independent dealers also handle potatoes.

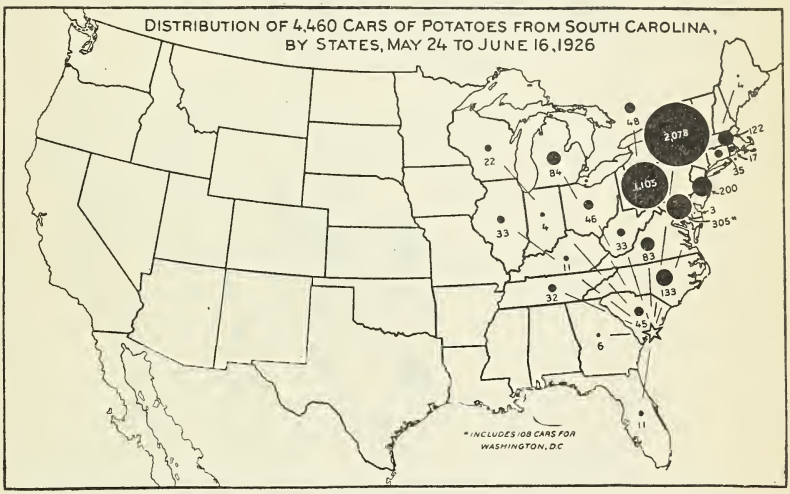

FIGURE 10.—A large part of the South Carolina crop is shipped to markets in the Middle Atlantic States

There have been various methods of financing farmers, so that they can obtain fertilizer, seed, and barrels. Most of the financing is now done through the association and the dealers. Farmers who contract with dealers agree to market through the dealers who have assisted them in financing the production and harvesting of the crop. Some city dealers who have financed growers handle the crop on consignment, although very few city dealers are now financing growers. The association and other shippers sell as much as possible on an f. o. b. usual terms basis. In periods of heavy supply it is necessary to roll shipments unsold or to consign to business connections in northern markets.

ELIZABETH CITY, N. C., AND NORFOLK, VA., DISTRICTS

The Elizabeth City district is in the extreme northeastern part of North Carolina. Shipments from this district are chiefly from Pasquotank, Tyrrell, Camden, and Currituck Counties. The Norfolk (Va.) district is near, and a large part of the movement from

both districts is during June. During this period potatoes from Arkansas and Oklahoma are being shipped into middle-western markets. Districts in North Carolina farther to the south are shipping during part of the Elizabeth City and Norfolk season, and the movement from Northampton County on the eastern shore of Virginia gets under way early in June. Principal markets for North Carolina potatoes are in the Northeastern States and as far west as Illinois and Wisconsin.

The Irish Cobbler is the variety grown in North Carolina and Virginia, and the seed is obtained from Maine and Prince Edward Island. Cloth-top stave barrels are used in shipping.

Financing of growers or share cropping is a common practice in these districts. Dealers often furnish farmers with seed, barrels, fertilizer, and sometimes labor to produce a crop. A large part of

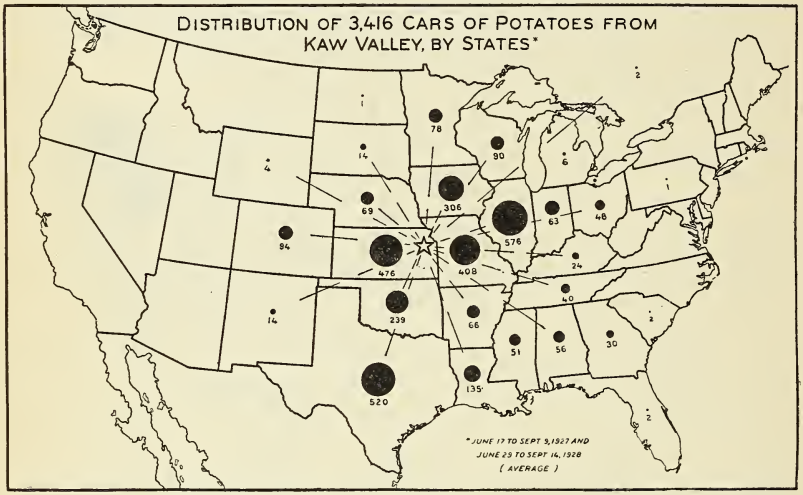

FIGURE 11.—Important markets for Kaw Valley potatoes are in Illinois, Texas, Missouri, and Kansas

the acreage is under the control of these dealers, who distribute the crop. The greater part of the crop normally is sold f. o. b., usual terms, on wire orders. Some sales are on a cash-track basis. A few dealers make a practice of consigning practically all the potatoes they handle.

Grading is done by hand in the field and most sales are on a basis of United States grades.

KAW VALLEY, KANS., AND ORRICK, MO., DISRICTS

The Kaw Valley district in Kansas, together with the Orrick district in Missouri, is an important source of potato supply during July and August, for the region from Illinois to Texas. Such cities as Chicago, St. Louis, Kansas City, Des Moines, Dallas, Fort Worth, Houston, San Antonio, and New Orleans are important markets for Kaw Valley shipments. (Fig. 11.) There is a wide distribution to smaller cities in near-by States, and a considerable movement as far east as Ohio and Georgia, and as far west as Colorado.

In the markets east of the Mississipppi River, Virginia, Maryland, and New Jersey potatoes offer strong competition. The crop from Kentucky and Nebraska also moves to market during the Kaw Valley shipping period. Kansas shippers watch closely the reports from Colorado and Minnesota and endeavor to complete their marketing before shipments from these two States become heavy.

In the Kaw Valley most of the growers finance their own crops with the aid of local banks, and there is little shipping for the growers' accounts. Probably 95 per cent of the Kaw Valley potatoes are sold by growers on a cash-track basis. The majority of the cars are shipped by the cash-track buyers, on orders, to the markets throughout the Central States.

A large part of the crop in the Orrick (Mo.) district is financed by a few shippers who furnish seed, taking as security the growers' note, payable at the time of harvest; or they furnish seed and pay certain expenses of growing and harvesting for one-third of the crop at harvest time. Under the share arrangement, in addition to one-third of the crop, the shipper who finances the grower usually has an option to buy or ship on account the remainder of the crop. When the crop is handled on account the commissions charged are usually rather small, amounting to $15 or $20 per car. Much of the Missouri stock is shipped to Chicago and St. Louis to be sold on track.

Kansas growers use machine sizers to a large extent and grade their stock. Most of the Missouri stock is shipped field-run. Probably 70 per cent of the Kansas shipments are even-weighted, whereas very few Missouri shipments are in even-weight sacks. In both sections there is a growing preference for 100-pound sacks instead of 120-pound sacks.

Irish Cobbler comprises probably 95 per cent or more of the shipments from both the Kaw Valley and the Orrick districts. A small quantity of the Triumph and Early Ohio is produced.

Attempts have been made to organize cooperative associations in the Kaw Valley, but up to the present time no organization of growers has had much influence on the marketing of the crop.

EASTERN SHORES OF VIRGINIA AND MARYLAND

The eastern shore of Virginia, consisting of the two counties of Accomac and Northampton, is about 77 miles long and from 2 to 20 miles in width, averaging about 8 miles in width. More than 20,000 cars of potatoes have been shipped from this district in a single season. The marketing center is at Onley. Adjacent to this district on the north is the Eastern Shore of Maryland, which is an important early-potato district with its market center at Pocomoke. South of the eastern shore of Virginia, across the Chesapeake Bay, is the Norfolk district of Virginia, which usually ships one-sixth to one-fourth as many potatoes as does the eastern shore of Virginia.

Shipments usually begin to move from the eastern shore of Virginia early in June and continue until after the middle of August. The Maryland movement usually begins about the 1st of July and continues until about the middle of August. During July, eastern shore potatoes dominate the markets. Potatoes from the Norfolk district and from North Carolina compete during the first part of

the eastern shore season. Toward the end of the season New Jersey and Long Island potatoes are in competition on the markets. The Mississippi Valley markets receive potatoes from the Kaw Valley district and from Kentucky during the eastern shore shipping period. The Northeastern States are the principal marketing region, although large quantities are shipped to the Middle West. Cuba is an important market for Virginia potatoes. The figures compiled by the United States Department of Commerce for July and August, 1927, show that 268,000 bushels of potatoes were exported to Cuba through the customs district of Virginia. The corresponding figure for 1928 was 678,000 bushels. Most of these potatoes probably were produced in Virginia, although other near-by States may have supplied some of them. Figure 12 shows the average distribution of eastern shore of Virginia potatoes in 1927 and 1928.

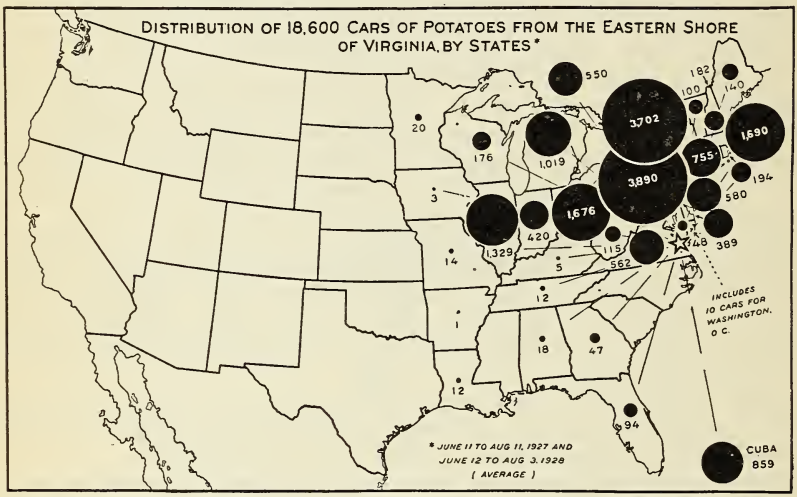

FIGURE 12.—Eastern shore of Virginia potatoes are widely distributed. Many shipments go to the Middle West, as well as to the Middle Atlantic and New England States

The Irish Cobbler is the variety grown. Much of the seed comes from Maine and Prince Edward Island; however, in Maryland and in Accomac County, Va., most of the seed is from a local fall crop produced from northern seed held over in cold storage. The cloth-top stave barrel is used almost exclusively, but during periods of low prices some shipments have been made in 100-pound sacks, and occasionally in bulk. Experimental shipments have been made in 15-pound bags for distribution to the consumer in the original package. Potatoes are usually graded by hand in the fields as they are picked, after being plowed out. The smaller potatoes and the defective stock are kept separate from those of No. 1 grade. In periods of heavy supply and depressed prices the smaller potatoes (No. 2 grade) are left in the fields. Most of the potatoes are shipped in refrigerator cars under ventilation.

Since 1900 the center of activity for potato marketing on the eastern shore of Virginia has been at Onley, Accomac County, the headquarters of the Eastern Shore of Virginia Produce Exchange.

This exchange, during the period 1925–1929, handled about 60 per cent of shipments from the eastern shore of Virginia. This exchange, through its officers and sales force, handles not only potatoes shipped from that territory but also large quantities of sweet potatoes and other farm products. Although the exchange has met some competition, its career has been one of marked success. A brief description of the operations of this exchange will explain the marketing methods prevailing to a large extent on the eastern shore of Virginia and in several potato sections farther south, where market operations are carried on by associations modeled after the older organization in Virginia.

The several thousand farmers who are stockholders in the exchange agree to market their products through this organization. The exchange acts as sales agent and, in addition, serves as purchasing agent for seed potatoes and other supplies needed by the growers. For convenience in marketing, the central exchange at Onley has established more than 50 locals. Each has a resident agent, an inspector, and a director, the latter representing the local group at the meetings of the central organization. The agents conduct the general business of the exchange in their respective districts. It is the duty of the local inspector to see that all potatoes are properly graded, packed, and branded and to regrade or reject undesirable stock. Most of the grading is done by laborers who sort the potatoes while picking them up in the field under the supervision of the farmer.

In addition to this organization in the producing area, the exchange has market agents in a large number of important markets in the United States and Canada, chiefly in the New England and the Middle Atlantic States. These agents take the place of city brokers. They solicit and fill orders, handle the collection of accounts, etc. They keep the Onley office of the exchange in constant touch with market conditions and are a most valuable part of the organization.

Because of many years' experience and aided greatly by the reports from its market agents, who are at work before the shipping season actually opens, the exchange is able to advise potato growers when to load cars at the various shipping stations. In this way the flow of potatoes from country to city points is adjusted to meet the market demand as nearly as possible. All shipments are pooled daily. Cars of the same grade loaded on one day return the same price to the grower, whether or not the sale is completed on that day and regardless of actual variations in prices for individual cars. Farmers receive settlement within 10 days after the shipment is made. The exchange operates on a commission basis not to exceed 5 per cent nor more than 20 cents per package. All expenses of the exchange are paid from this fund and an annual dividend is paid to stockholders. The remainder of the fund is divided between the reserve fund and the producers, prorated according to the number of carloads to each member who has shipped all of his potatoes through the exchange.

During the marketing season the exchange has private telegraphic lines to Philadelphia, and the commercial telegraph companies have stations in the building of the exchange at Onley. As inquiries and orders come over the wires from its market agents in leading

cities or from brokers or dealers at other points, the exchange fills the orders from the loaded cars on hand or from cars that have been rolled unsold. A private telephone wire connects local offices of the exchange with the central office at Onley. A complete record of all sales is kept by a special card system.

The exchange has its own brands representing grades of potatoes and its own inspection service. Most of the sales are made on an f. o. b. usual terms basis, the stock being subject to inspection by the receiver before acceptance. This method is followed to the utmost extent practicable. Some of the cars are shipped to commission merchants whom the exchange has found to be trustworthy.

Practically all shipments except those of the Eastern Shore of Virginia Produce Exchange are inspected under the Federal-State shipping-point inspection service.

NEW JERSEY

The New Jersey early-potato section is in the intermediate class with Kentucky and Kaw Valley, Kans., although a little later in maturity of the crop. It supplies chiefly the eastern markets in late summer and early fall, following the eastern shore crop closely and competing with it to some extent. Early potatoes from Long Island are marketed during approximately the same period as New Jersey shipments. Most of the New Jersey shipments originate in five counties: Monmouth, Mercer, Middlesex, Salem, and Cumberland. As with other intermediate sections, the conditions vary according to the earliness and volume of the crop in States farther south and of the main northern crop. Considerable mechanical equipment is used. (Fig. 13.) The area of distribution is wide, including the whole eastern half of the country, but New Jersey and neighboring States—Pennsylvania and New York—take most of the crop. Many early shipments go to New England cities and west to Chicago; later shipments go south as far as Florida.

The Irish Cobbler is the principal early variety grown in New Jersey as in other sections near the Atlantic coast. The 150-pound sack is the chief package for car-lot shipments, but there is a growing tendency to use more of the 100-pound sacks, particularly for shipments to Philadelphia and near-by markets.

Potatoes may be sold by the wagonload for cash to local dealers, who in turn sell loaded cars to cash buyers or on orders by telegraph from city dealers or through brokers. The local dealers grade the potatoes. Most car-lot sales are on a delivered basis. Some potatoes are hauled to neighboring markets by motor truck. Growers' exchanges are a feature in both northern and southern New Jersey.

SOUTHERN CALIFORNIA

South of the Tehachapi Range in California, potato production is rather thinly scattered over an area extending along the coast from San Diego County to the San Fernando Valley north of Los Angeles, thence eastward into San Bernardino and Riverside Counties and south to Perris and Temecula. The earliest potatoes come from San Diego County, where the harvest begins the latter part of December and extends into July, with the heaviest diggings in April and May.

Shipments from the remainder of this area are made mostly in June and July. The Shafter district in Kern County, at the southern end of the San Joaquin Valley, ships mostly in June and July; in 1929 this district loaded 598 cars. Although shipments largely overlap those from southern California, in a normal season the heaviest movement comes a little later.

Nearly all of the San Diego County crop moves by truck to the Los Angeles market. The other southern California districts also

FIGURE 13.—Harvesting potatoes in New Jersey with a mechanical digger

market most of their crop by truck. From the area south of Tehachapi as a whole, 1,122 carloads of potatoes were moved to Los Angeles by truck in 1929, as compared with 367 cars by rail. The rail shipments from southern California are chiefly to Pacific coast cities; San Francisco and Portland are important markets. Shipments from the Shafter district go largely to the same markets, but their distribution is somewhat wider, reaching many cities in the Pacific Northwest and going as far east as Denver and sometimes to Chicago and Minneapolis. Coming after the early Texas crop is mostly out of the way, they meet little competition from that State.

Very few potatoes from this district go to southern California markets because of competition from the local crop.

The southern California crop is shipped almost entirely in lug boxes, as in most cases the potatoes are too immature for shipment in sacks. The boxes are usually open and hold 30 to 35 pounds of potatoes. The same package is used in local marketing until later in the season when sacks are used to some extent. The Shafter district ships entirely in sacks holding approximately 100 pounds, although not evenly weighted as a rule. The greater degree of maturity of stock from this section permits the use of sacks and also allows a wider distribution of the crop. Most car-lot shipments from southern California are graded in the field to meet the requirements of United States No. 1 grade. Size is the principal factor, since the stock is usually sufficiently smooth and free from blemishes to meet the other grade requirements with little difficulty. Small and inferior stock is marketed locally.

The southern California crop consists of American Giant (White Rose) and Up to Date, which is erroneously known as British Queen, the former making up 60 per cent or more of the total. In the Shafter district the Burbank and the American Giant, which is known in this district as the Wisconsin Pride, are the leading varieties.

Probably the majority of the southern California crop is controlled by shippers or Los Angeles receivers through cash advances covered by growers' notes or crop mortgages. Some of the larger and a few of the smaller growers are strong enough financially to carry their own crops or to arrange for loans direct from the banks, especially if they own their land. In most cases the financing begins with the planting of the crop. Shippers who handle seed stock supply the grower with seed on credit. The grower usually arranges with the fertilizer companies to furnish fertilizer on credit. In some cases the shipper furnishes the seed on credit without requiring the grower to give him control of the crop. In other cases the shipper does not furnish the seed but makes a cash advance of $100 to $250 a car, shortly before the harvesting of the crop. Dealers who operate in the Los Angeles market handle the crop on consignment, the commission rate usually ranging from 12 to 15 per cent and occasionally as low as 10 per cent. Car-lot shipments are handled for the growers' account for a brokerage of 5 to 10 cents a box, a rate depending in part on market conditions and prevailing prices. Although the grower consigns his crop as a rule, a considerable number of those who have not surrendered control of their crops sell for cash. Car-lot shipments are rarely consigned, being mostly sold by shippers f. o. b., usual terms.

NORTHERN AND NORTH CENTRAL CALIFORNIA

The first early potatoes in the central or northern districts of California originate in what is known as the San Francisco-peninsula district, or that district that is directly south of the city and county of San Francisco, extending into San Mateo County. This is also known as the Colma district. Most of the crop is harvested in April, May, and June. There is a small acreage in the Salinas Valley.

In the San Francisco-peninsula district the Garnet Chili is the principal variety, although a small quantity of the American Giant (White Rose) is grown. The seed, planted from December to March, is obtained in Oregon.

The metropolitan San Francisco Bay district is the largest consumer of potatoes grown in the Colma district, although a few cars are shipped into the Pacific Northwest, being loaded in straight carloads as well as in mixed cars with other vegetables. After the first or middle of July, sacked stock from the Sacramento-San Joaquin delta district is shipped to southern California markets, Mexico, and as far as Texas, under refrigeration.

The potatoes are seldom sufficiently matured to be marketed in sacks; almost the entire crop is sold in the 30 and 40 pound lug boxes. With the exception of the shipments that go out of the State, there has been practically no grading of the potatoes during the past few years.

The bulk of the acreage in the San Francisco-peninsula district is controlled by the Colma Vegetable Growers' Association, a nonprofit organization of growers. The association buys the potatoes and finances the crop. Until recently the potatoes were sold at public auction, but during the last year or two most transactions have been by private sale. This crop, with the exception of shipments to distant markets, moves almost entirely by truck.

Following the San Francisco-peninsula shipping season closely come the early potatoes grown in the Sacramento-San Joaquin delta district. In this district American Giant (Wisconsin Pride) is grown, and the first shipments, in lug boxes, are received on the San Francisco market during the middle of June. By the first or middle of July the potatoes are sufficiently matured to be packed in sacks.

The United States standards for potato grades have not been adopted in this district, but packs are put up that are commonly known as No. 1's and No. 2's; the No. 1 being the medium-to-large size, while the No. 2's are those that are generally under 2 inches in diameter.

The tracts in the delta are worked almost entirely by Mexican and Japanese labor. Harvesting is done mostly by machine digging, and shipments are placed upon the river bank, to be picked up by boats and moved to San Francisco, Oakland, Sacramento, and Stockton, where they may be loaded on cars and shipped to other markets.

Buyers visit the fields and contract for their supplies on the basis of 116 pounds to the sack. Little, if any, of this crop is shipped on consignment. Some of the larger growers have their own salaried representatives in the principal California markets to dispose of their potatoes. On account of the more or less isolated location, the crop is moved almost entirely by water and rail.

CONDITIONS IN REPRESENTATIVE CITY MARKETS

Although the trend apparently is toward the handling of a larger percentage of the early crop by large shippers or organizations, large quantities are still marketed by the smaller shippers and large growers.

Many small shippers and growers would profit by a better understanding of the conditions in the potato markets of our large cities. The potato is only one of a number of vegetables that are moved through the channels of distribution in the large markets. The jobbers, retailers, and peddlers who buy in the wholesale and jobbing markets in the cities constantly endeavor to buy as cheaply as possible. It is essential that the potatoes be in sound condition and of good appearance to enable the salesman to obtain a top price. During periods of heavy supply and slow movement, stock that is slightly defective must sometimes be sold at a considerably reduced price, if sold at all. A personal visit to the principal markets will do much to make clear to the small shipper or grower the market requirements and condition. He will learn his dealers point of view, his problems, and difficulties, which should do much to smooth the way in future business transactions.

The grower or small shipper can hardly realize all the little points that go to make up a good marketable product until he sees the best quality potatoes on the market and compares them with the poorer, lower-priced stock. (Figs. 14 and 15.) He should note the reaction of buyers to the various lots and get a first-hand understanding of the conditions and methods under which the city marketing is carried on.

In general, it is to the mutual advantage of shipper and city dealer to become acquainted with the problems of the other. The dealer who does not have certain shippers upon whom he can rely for a supply of good-quality potatoes is at a disadvantage, as is the shipper who does not have established customers or trade connections in the markets.

An outline of conditions and practices in marketing early potatoes in a few representative cities is here presented to familiarize growers and shippers with market conditions.

NEW YORK CITY

During recent years approximately one-third of New York City's annual supply of potatoes has been of early stock. Beginning about November, shipments from Bermuda arrive; they continue until June. There are some receipts from Cuba, from February to April, and light receipts from Florida during the winter, but the heavy Florida shipments are received from March to May. New York's supply of early potatoes in the 1929 season amounted to about 8,500 cars, of which 204 were from Bermuda and 163 from Cuba. With the exception of these imports, the city's early-potato supply comes almost entirely from Atlantic Seaboard States from Florida north to Long Island. In 1929, Virginia furnished almost one-third of New York's early potatoes, whereas Florida and the Carolinas combined furnished somewhat more than one-third. About 7 per cent came in by truck to the jobbing and farmers' markets.

Practically all southern stock from States south of New Jersey is sold on the docks where the cars are received when they are lightered across the Hudson River. Rail receipts from New Jersey are sold both on the docks and in the railroad yards. Motor-truck receipts are sold from the dealers' stores, some loads being delivered

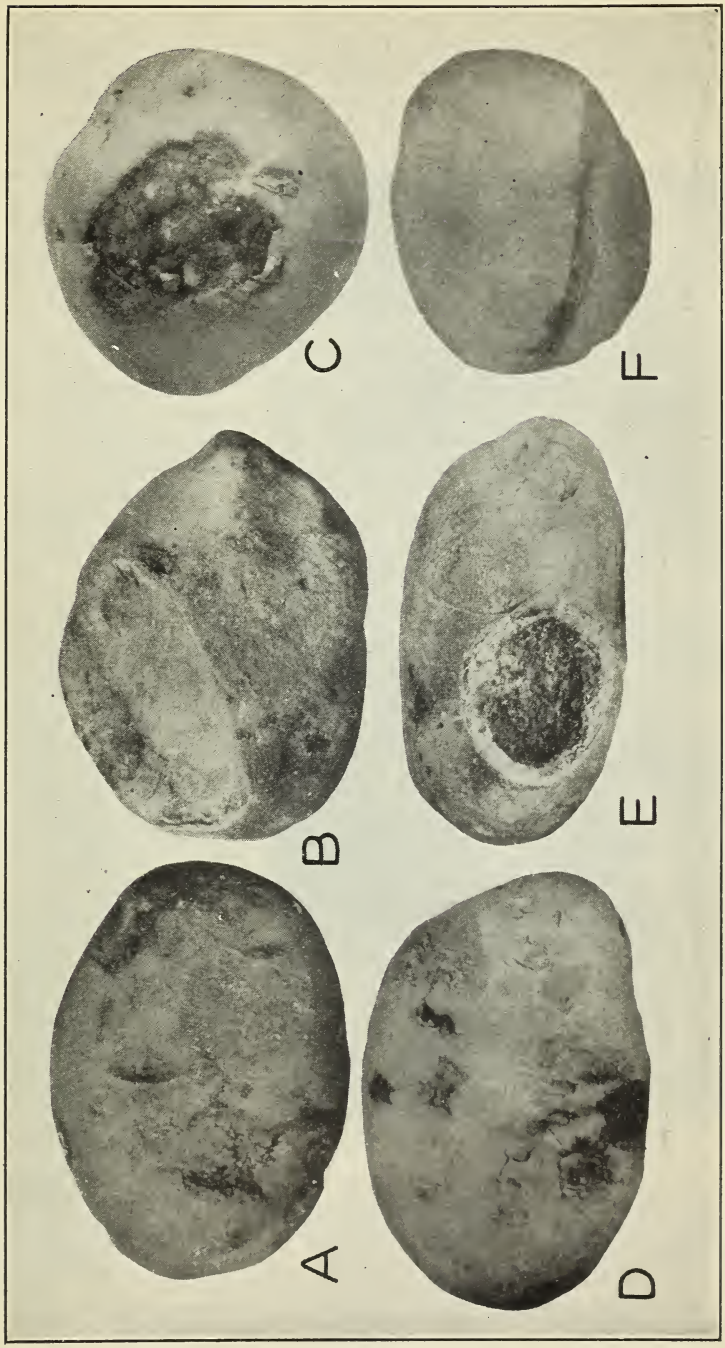

FIGURE 14.—Common defects of early potatoes: A, Slimy soft rot; B, cuts and decay; C, sun scald; D, scab; E, grub injury; F, bad cuts

directly to the buyer. Rail receipts from Long Island are sold in the railroad yards.

Most of the first sales, when cars are unloaded, are in jobbing lots, especially in the early part of the season. Later in the season, when prices are usually lower, or on an advancing market, there are some car-lot sales. In the early part of the season the size of lots sold to jobbers is usually from 10 to 25 barrels. Later, sales of 50 barrels to as much as a carload are frequently made. Much of the chain-store supply is bought in carloads f. o. b., but often it is necessary to supplement this stock with purchases on the local market.

FIGURE 15.—Much loss occurs from breakage of weak packages

New York dealers advance considerable funds in financing growers in the region from Florida to Norfolk, Va., and consequently receive large quantities on consignment. Considering the city's early supply as a whole, it is probable that the number of cars received on consignment and the number purchased are about equal.

Early potatoes and late potatoes are handled by different groups of dealers in New York. There are about 12 important receivers of Florida stock, whereas 20 to 30 dealers receive Virginia shipments.

Red stock (Garnet Chili and Triumph) is taken freely when coming from Bermuda and Cuba. The Bermuda stock is popular with the large hotels, the restaurants, and the dining-car trade. In Florida potatoes, the Spaulding No. 4 is preferred to either the Triumph or Irish Cobbler, but in stock from other sections the Irish Cobbler is preferred. A medium-to-large-sized potato is desired by the New York trade at all times, and small stock is in very limited demand except when prices are very high.

Cuban stock is packed in the Cummer style crate and Bermuda stock in double-headed barrels. The double-headed barrel is preferred for Florida stock, although some early shipments are received in bushel boxes and bushel hampers; some of the later shipments are received in 150-pound sacks, but this is not a desirable package. The stave and the slat barrel or veneer barrel is used by the Carolina, Virginia, and Maryland shippers, but the stave barrel is preferred and generally sells at a slightly higher price than the lighter-made barrel. New Jersey stock is practically all packed in the 150-pound sack; Long Island stock arrives in bulk and in 150-pound sacks. On the farmers' markets Long Island stock is handled in various-sized sacks ranging from 60 pounds to 150 pounds.

Early-crop potatoes are distributed from New York City to markets within a radius of about 50 miles. The quantity so distributed depends upon price and the condition of the market. Dealers in the smaller markets within this territory buy most of their supplies of Florida and South Carolina potatoes in small lots on the New York market, but these dealers generally buy North Carolina and Virginia potatoes in car lots f. o. b. and distribute through their immediate territory. Throughout the territory of New Jersey and Long Island there is generally a supply of near-by or home-grown stock.

CHICAGO

Chicago draws a large part of its supply of early potatoes from the following States, listed in the order of their importance: Virginia, Texas, North Carolina, Missouri, Kansas, Alabama, Oklahoma, Florida, Louisiana, and Nebraska. The quantity of home-grown potatoes on the Chicago market is negligible.

Fully 90 per cent of the potatoes sold for consumption in Chicago are sold on a "car-lot outweight" basis. The remainder are sold on a car-lot basis, but on the invoice weight. The car-lot outweight basis of sale means that the potatoes are weighed as taken from the car and paid for on that basis. There are approximately 20 car-lot potato dealers in the city; many of them have business connections outside of Chicago, and many car-lot sales are made to these outside points. Such sales are based on invoice weights.

Local car-lot sales are chiefly sales to jobbers on the South Water Street market and the West Randolph Street market. Probably the volume of business is about equally divided between these two markets. These jobbers haul the stock to their stores, where it is sold direct to retailers from the stores or delivered to retail stores. Several of the jobbers have established routes that are regularly covered by their delivery trucks. Peddling on track is decreasing each year and has become negligible.

Chicago chain stores buy potatoes both at shipping points and in the local markets. The proportion of their supplies bought locally varies from week to week according to the market conditions. The general trend seems to be toward a larger percentage of purchases at the country shipping points by chain stores.

Approximately 75 per cent of the stock handled in Chicago is purchased or merchandise stock, the remainder being handled on a commission basis by approximately 20 dealers.

Since the Spaulding No. 4 is the principal variety grown in Florida, the trade expects it, but some well-informed opinion is that if the Irish Cobbler or Triumph were offered along with Spaulding No. 4 either or both would prove more popular than Spaulding No. 4. The Burbank or long white, at one time rather popular in several Southern States, has almost disappeared from the market. The Irish Cobbler has now supplanted the Early Ohio in the receipts from the Kaw Valley section. Not many years ago the Early Ohio represented about 75 per cent of the early stock from the Kaw Valley section. The Chicago trade seems to prefer the Irish Cobbler from sections like Virginia and the Carolinas, where it is the chief variety grown, and the Triumph from sections like Alabama and Texas, where it is the chief variety.

The Chicago trade has become accustomed to the barrel for receipts from the Atlantic seaboard States, but well-informed opinion is that after a thorough trial the trade would prefer the 100-pound sack, even from the Atlantic Seaboard States. Nearly all of the other early States use the 100-pound sack, and it is a popular package. It is easily handled, makes an attractive load, and is certainly more popular with the retail grocers.

PHILADELPHIA

The principal sources of the Philadelphia early-potato supply are Virginia, Florida, the Carolinas, New Jersey, and Maryland. Most sales to jobbers and some to chain stores are made at the produce terminals from cars unloaded on the floor or from samples. These jobbing sales are frequently in lots of 25 to 100 packages. There are some car-lot sales to out-of-town buyers, and the chain stores buy some potatoes direct from shipping points and in car lots on track.

Some car-lot purchases for the Philadelphia market are on an f. o. b. shipping-point basis, but in most cases the buying is on a delivered basis. The quantity received on consignment has declined in recent years.

There are approximately 20 firms in the city that are active in the early-potato business at some time during the season. Potatoes jobbed on the Philadelphia market are distributed in the city and to points within a radius of 50 miles or possibly more.

The Irish Cobbler is the most popular variety of early potatoes, but the Spaulding No. 4 from Florida is used in quantity. The Triumph meets a limited demand. Pink potatoes do not move freely in Philadelphia when Irish Cobblers are available.

Barrels have long been the favorite package for potatoes from Virginia and other southern points (fig. 16), but in recent years a few cars of Maryland and Virginia potatoes have been offered here in 100-pound sacks and have sold well. There is every reason to believe that early potatoes packed in 100-pound sacks, arriving in good condition, will sell as well as barrels; to say the least, the demand for 100-pound-sack stock is increasing rapidly. There were one or two cars of 25-pound and 50-pound sacks from Maryland in 1929. The 50-pound sacks sold fairly well, but the 25-pound package did not move freely. New Jersey potatoes arrive in Philadelphia by rail in 150-pound and 100-pound sacks and occasionally in

120-pound sacks. Probably the majority of New Jersey potatoes arriving in trucks are packed in 100-pound sacks. It appears to be only a matter of time before New Jersey shippers will realize that Philadelphia is rapidly developing into a 100-pound-sack market. During the winter of 1929–30 late potatoes packed in 150-pound sacks were usually discounted, while those in 120-pound sacks have moved slower than the 100-pound package and have frequently sold at a discount.

ST. LOUIS

Oklahoma, Texas, Louisiana, Alabama, and Arkansas are the chief sources of the St. Louis early-potato supply until about the middle of July, when local Missouri stock is ready for market. Most of the receipts are of Triumph up to the time Missouri potatoes come on the market, when the trade shifts to Irish Cobbler.

The majority of St. Louis early-potato receipts are handled by five dealers, most of whom purchase their supplies on an f. o. b. basis; one however, handles large quantities on a consignment basis.

Practically all sales in St. Louis are known as street sales, and there are few transactions in the railroad yards, although a few car-lot sales are made. In such cases the buyer goes to the car to inspect the potatoes. Sales to jobbers are usually in lots of 5 to 50 sacks, the usual number being 20 to 25 sacks per sale. The quantities of potatoes purchased by chain stores from local dealers varies considerably with market conditions.

FIGURE 16.—A well-filled cloth-top stave barrel used in shipping early potatoes in some Atlantic coast sections

St. Louis is a distributing center for early potatoes to towns within a radius of approximately 150 miles. Distribution in this territory is chiefly by motor truck although there are some car-lot diversions.

The 100-pound even-weight sack is much preferred by the St. Louis trade. The 50-pound sack has been tried to a limited extent. This package is favored particularly by the chain stores, but the jobbing trade in general does not favor its use.

The local potato crop, trucked from near-by points, is sold chiefly in bulk to the receivers who either sack it or place it in crates for distribution. Potatoes from the Chesterfield district are usually packed in 100-pound even-weight sacks and trucked to the St. Louis market.

SUMMARY

The production of the commercial early-potato crop is largely concentrated in certain districts, particularly in Atlantic Coast States from Long Island south, in the Gulf Coast States, in parts of the Mississippi and tributary valleys, and in California.

Car-lot shipments of early potatoes during the period 1925–1929 averaged more than 60,000 cars annually. The average farm value of the early crop during this period was approximately $48,000,000.

Competition is keen among producing districts. The shipping season gets well under way in March in Florida and southern Texas, and as the harvesting season progresses northward, heavy shipments continue through August. The market outlets for any district are governed largely by competition from other districts and transportation charges.

The early crop, unlike the late crop, must be marketed promptly when harvested. To insure good condition upon arrival at the market, it is essential that growers and shippers handle the early crop carefully when harvesting and packing to prevent unnecessary bruising and skinning. The potatoes must be protected from the hot sun and should not be packed when wet soil adheres to them. When packed in barrels they should be well shaken down to insure a full pack upon arrival at market. Cars should be loaded in an approved method to obtain good ventilation and to prevent damage from the shifting of the load.

Efficient grading and inspection are aids in marketing. Federal-State inspection service is available in important producing districts and is widely used. Federal inspection is available in the leading markets.

Sacks (ranging in size from 100 pounds to 150 pounds) and barrels are the packages in which most of the early crop is shipped. The 100-pound sack is gaining in favor in some sections. The principal varieties are: the Irish Cobbler in the East and in the Missouri and Ohio Valleys; the Spaulding No. 4 in Florida; the Triumph in the south central region; and the Garnet Chili, and American Giant (White Rose) or (Wisconsin Pride) in California. Growers in general will do well to grow the variety that has proven successful and to pack in the container that is recognized as standard in their district.

In most districts the grower does not retain marketing control of his crop, but contracts with shippers or markets through a cooperative association. Seed, fertilizer, containers, and production expenses are frequently advanced by dealers, who market the crop for the grower's account. Many car-lot sales are on telegraphic orders on an f. o. b. usual terms basis. Some are consigned and some sold on a delivered basis.

Even if the grower does not retain marketing control of his crop it will be to his advantage to keep in close touch with crop news and market reports. He can thus determine whether or not his own marketing agency is handling his crop in an efficient manner. Government reports on crop conditions, outlook, market news, and various phases of production and marketing are available to the grower and shipper.

Prices are affected by such factors as size of the crop in early sections normally shipping during the same period; the quality and size of potatoes; the length of the shipping season and relative earliness or lateness of harvest in certain other sections, and the quantity of old-crop potatoes carried over from the previous season.

Since the size of the early crop is the principal factor affecting price, the interstate early-potato committee has been organized in certain Atlantic seaboard States. Its plan in general is to encourage the planting of only sufficient acreage to produce, under normal weather conditions, a crop that the markets will absorb at a fair price. Its success is dependent to a large extent on the cooperation of growers, shippers, and others who may supply funds for the production of the crop.

By studying conditions and practices in other producing districts and in the markets, the grower will gain information that will help him in dealing with his own marketing problems.

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